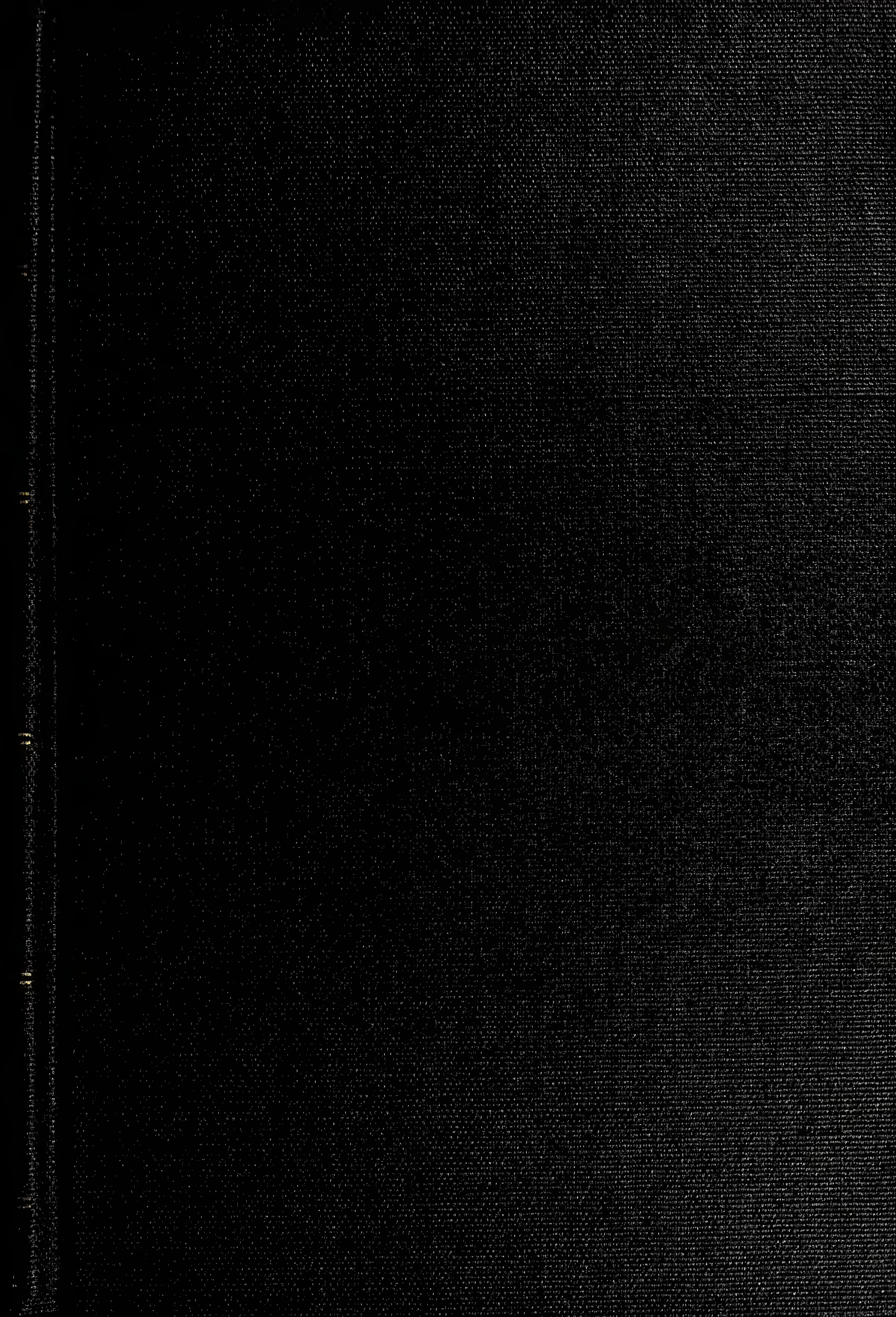




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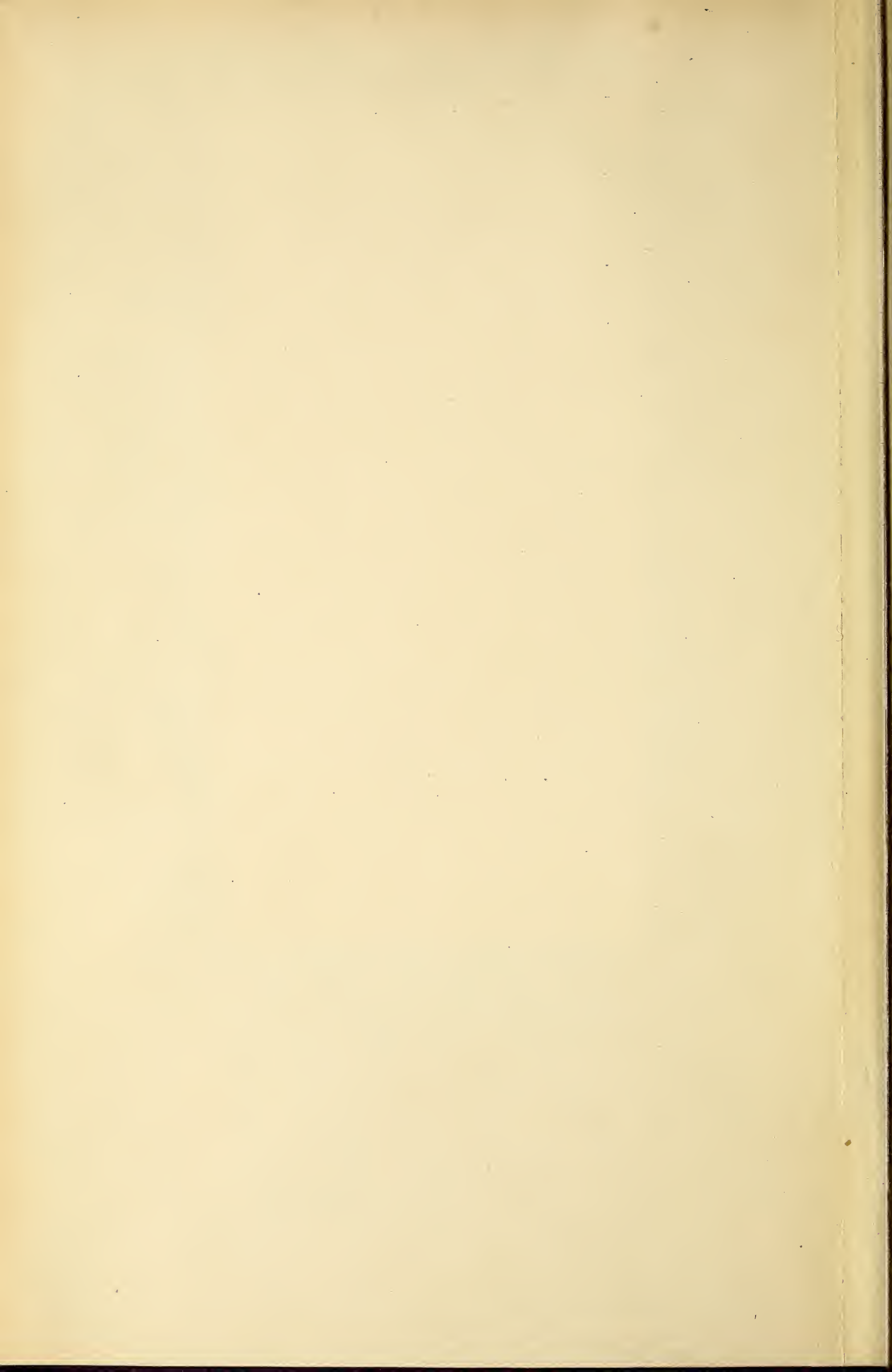
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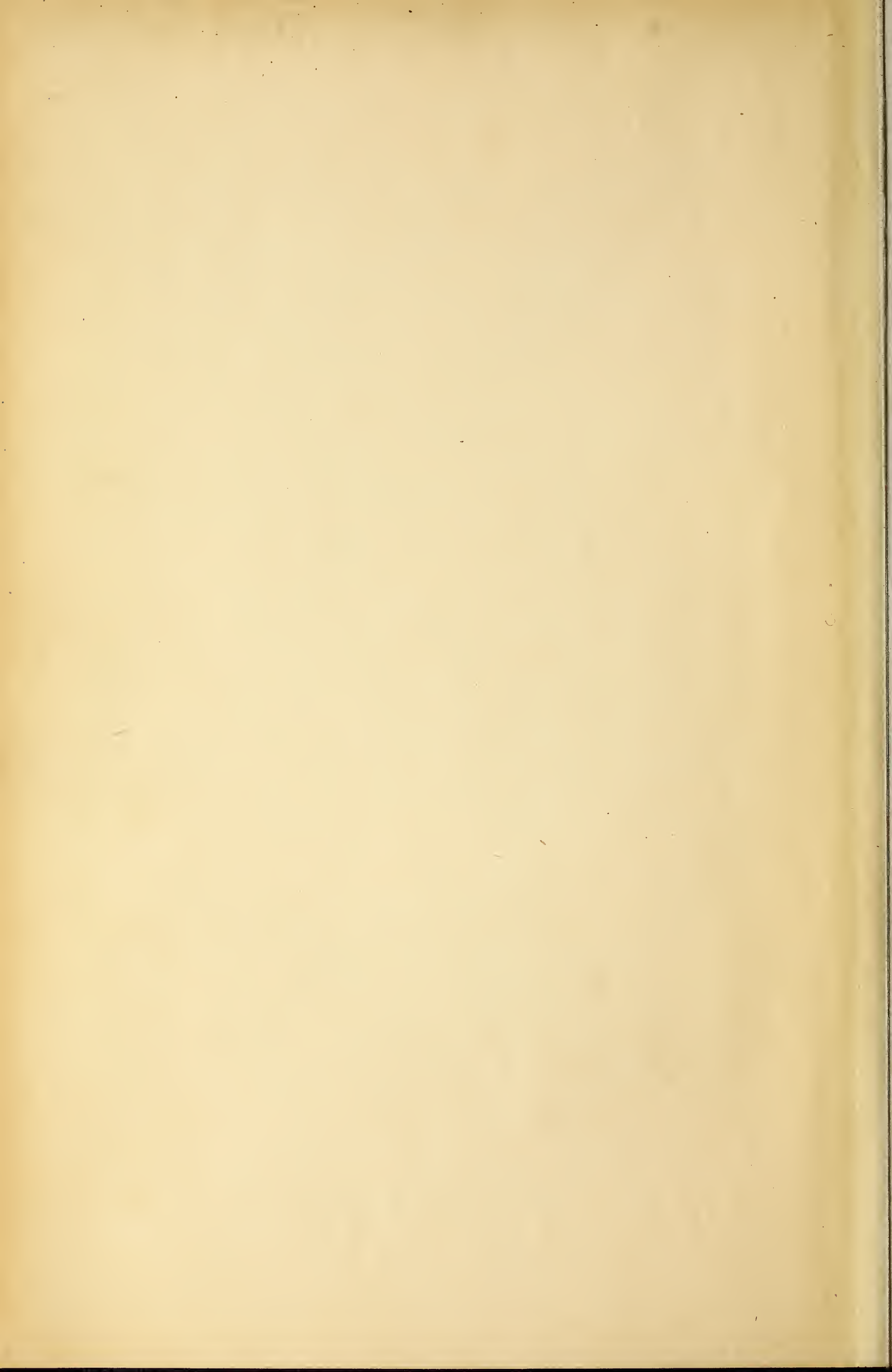
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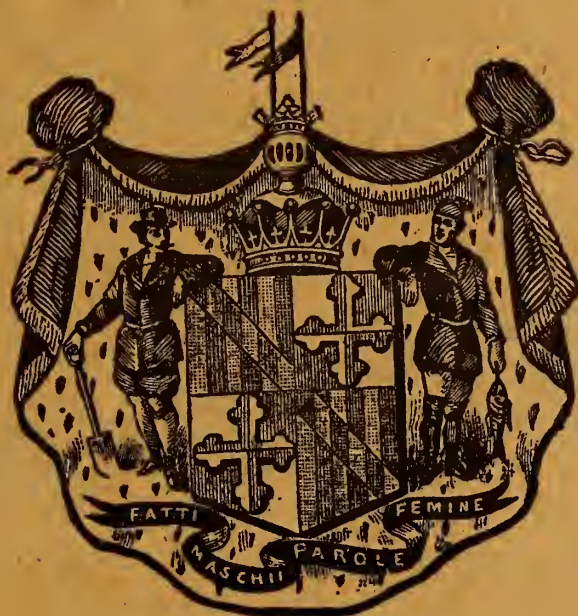
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BALTIMORE, JANUARY, 1910

Whole No. 1100

THE SURGERY OF THE THYROID GLAND.

By Randolph Winslow, M.D., LL.D.,
Professor of Surgery in the University of Maryland.

READ AT THE SEMIANNUAL MEETING OF THE MEDICAL AND CHIRURGICAL FACULTY, BRAD-
DOCK HEIGHTS, MD., SEPTEMBER 16, 1909.

(Continued from December Number.)

CASE 20.—*Exophthalmic Goitre (Cured).*

Mrs. S. G.; admitted September 17, 1907; discharged October 11, 1907.

Patient entered Hebrew Hospital 17th of September, 1907, complaining of "nervousness for the past four years," which prevented her from retaining any permanent position. Her father died of "tumor of the liver," but the patient has had no illness since she recovered from a skin eruption, characterized by "lumps," when she was 12 years old. The present trouble dates from the death of her mother in January, 1904, when she became nervous and suffered from palpitation of the heart. In May, 1904, a physician remarked on her protruding eyes and a small tumor in the patient's neck, which has greatly increased in size since the beginning, but neither the size of the tumor or exacerbation of symptoms is greater at the menstrual period. Palpitation of the heart, loss of appetite and development of temperature caused the patient to enter the hospital.

A physical examination revealed marked exophthalmos, and the patient was unable to cover the eyeballs with the lids. A diffuse mass, the size of a small orange, was noted on the right side of the median line in the region of the thyroid gland, also a tumor in the same locality on the left side, but only as large as an English walnut. The mass was distinctly outlined and movable. The surface was smooth and firm. A distinct thrill was elicited over the tumor on both sides, and also a sense of pulsation over the carotids. A murmur, dull, but with its greatest intensity over the right upper, outer portion, was heard on auscultation. She suffers

~~18675~~

78868

from dyspnea and palpitation of the heart, and is easily exhausted on exertion.

Pulse rate 100-135; volume, tension and force good. Has exacerbations of temperature reaching 104° to 105° every third day.

Operation.—September 26, 1907. The field of operation was cleansed in the usual manner. Morphia sulphate, gr. $\frac{1}{4}$; atropin, gr. 1-150, was given the patient hypodermically one-half hour before the operation. The line of incision was infiltrated with Schleich's solution, and an incision was made extending from the



CASE 20.—EXOPHTHALMIC GOITRE.

median line outward toward the right side of the neck over the lower portion of the mass to a point about three and a half inches from the median line. The veins of the neck were then exposed and ligated. The sterno-hyoid and sterno-thyroid muscles were divided and the sterno-cleido-mastoid was retracted. The capsule, which was very vascular, was then exposed and opened. The right portion of the mass was dissected from the capsule and removed, and the stump sutured. The divided sterno-hyoid and sterno-thyroid muscles were sutured, and the wound was tightly closed. Drainage was secured through a puncture in the skin at the suprasternal notch. During the operation 1-30 gr. strychnine was given hypodermically, and the patient's condition was good, her pulse registering from 140 to 145 per minute.

Between the time of admittance to the hospital and the operation the patient's mental condition became excited, and her temperature rose to 105° , but her pulse was feeble and rapid. The day following operation her temperature reached 101° , pulse 120 to 140 per minute, both gradually returning to the normal, which was reached on the sixth day.

The exophthalmos decreased and the patient's condition was very satisfactory. Highest temperature after operation 101° , highest pulse after operation 150, highest respiration after operation 29. She subsequently was able to resume her work.

CASE 21.—*Simple Goitre (Cured).*

F. F.; age 21 years; colored; married; admitted to University Hospital March 9, 1908; discharged March 27, 1908.

The patient came to the hospital with a lump in her neck. It was about the size of a hen's egg and toward the right side of neck. The respiration was embarrassed; the pulse quickened and a change in voice noticed. The lump moved when the patient swallowed. She first noticed this lump in the neck about a year before coming to the hospital. A tickling in the throat, resulting in a soreness and followed by coughing, bothered her for some time, but otherwise no suffering was experienced. Exertion caused great shortness of breath, and sleep was secured only when the patient was propped up with two or three pillows. As the lump increased in size the shortness of breath became more pronounced.

Operation.—March 12, 1908. Preparation was made in the usual way, and a local anesthetic was applied. A transverse incision about three inches in length was made exactly over the center of the thyroid gland. The right lobe was exposed and found very much enlarged. After some difficulty, on account of tight adherence to surrounding structures, it was shelled out with the capsule intact. The vessels were then tied with fine silk, and a small rubber tube was inserted for drainage, after which the wound was closed with catgut sutures. During the operation the patient complained of but little pain, and had no difficulty in breathing. Tube was removed in 4 days and the suture in 11. On the eleventh day a primary union had taken place, but the drainage wound was still open. The wound was healed and drainage had ceased when the patient was discharged 16 days after operation.

Highest temperature $101\frac{3}{5}^{\circ}$, highest pulse 150, highest respiration 35.

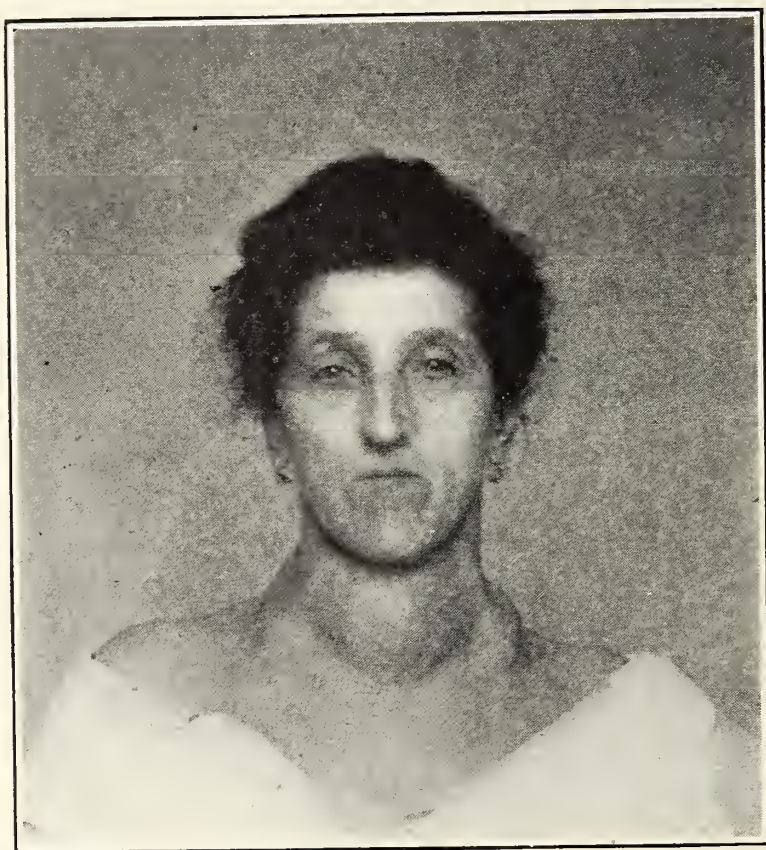
CASE 22.—*Parenchymatous and Colloid Goitre (Cured).*

B. M.; age 20; white, unmarried girl; admitted February 23, 1909; discharged March 8, 1909.

The thyroid gland was well defined and hypertrophied, and was movable, but not tender. The enlargement was most marked upon the right side. The development had been going on for four years, but gave the patient no discomfort except when she slept on her

back. No exophthalmos or cardiac disturbance had resulted, but she was very nervous.

Operation.—Hyocine and morphia were administered hypodermically before the operation and $\frac{1}{2}$ per cent. cocaine infiltrated locally. A curved incision was made, with convexity downward, about four inches long. The flap was dissected up, muscles divided and capsule opened. Right lobe and portion of left removed. Some hemorrhage, but no large vessels or nerves cut. Bleeding points ligated, a tube introduced for drainage, muscles and fascia closed with silk. Skin sewed with silkworm gut. Wound dressed with posterior splint of pasteboard to neck. Drain removed on the



CASE 23.—PARENCHYMATOUS GOITRE WITH ACCESSORY THYROIDS.

second day after operation; sutures removed on the sixth day, the wound having healed except at the point of drainage.

Temperature 101° , pulse 115, respiration 30.

CASE 23.—*Hypertrophied Thyroid, with Enlarged and Inflamed Accessory Thyroids (Cured).*

Mrs. C. K.; age 54; white; formerly one of Professor Czerny's hospital nurses at Heidelberg; admitted March 11, 1909; discharged March 22, 1909. Referred to me by Dr. McElfresh.

About five years before coming to the hospital the patient strained her neck, and soon noticed a swelling in the midline of the neck just above the clavicle. This enlarged, but was painless until a year before operation, when the patient noticed a swelling growing on each side of her neck just posterior to the sterno-

cleido-mastoid. About a month before coming to the hospital these began to increase in size, were tender, painful and inflamed, and interfered somewhat with respiration. She cannot lie flat, but must be propped on her side. Lips were very cyanotic, but heart was clear; no exophthalmic symptoms; pulse rate slightly accelerated.

Operation.—March 12, 1909. Morphia, $\frac{1}{4}$ gr., and scopolamine, 1-150 gr., were given to the patient, and half an hour later another hypodermic of one-half that strength was given. A local instillation of $\frac{1}{2}$ per cent. cocaine was administered after the neck had been prepared in the usual manner for an aseptic operation. An oblique incision was made over the lump to the right side about two and a half inches long just back of sterno-mastoid, running obliquely downward and forward, and three separated and detached lumps were removed. A curved incision, convexity downward, was made over the growth in the median line, and the gland was removed subcapsular; no vessels ligated, but were crushed at base and tied off. The tumor on the left side was not entirely removed, but was sutured through and through with catgut. All three drained freely.

Drains removed on third day, sutures on seventh, and the wound healed nicely. The highest temperature was $101\frac{2}{5}^{\circ}$, pulse 112, respiration 30.

This was an exceedingly interesting case, as there were three entirely separate glandular masses behind the sterno-mastoid muscle in the right posterior triangle of the neck, which were removed and found to be thyroidal on microscopical examination. Another distinct growth as large as a hen's egg was found posterior to the left sterno-mastoid muscle, which was partially removed, as it was feared to remove too much thyroid gland tissue, whilst in the center of the neck was a large globular mass over the trachea, which was excised entirely. She made a good recovery.

CASE 24.—*Cystic Goitre.*

Woman; white; age about 35; was admitted to University Hospital in the winter of 1908-09 for some medical or gynecological complaint. She was noticed to have a distinct enlargement of the thyroid gland, nodular, but causing no special discomfort, except that due to its cosmetic effect. She desired to be relieved of the blemish. Operation was done under local anesthetic, the gland exposed, and the growth was found to be a cyst embedded in the substance of the thyroid gland. This was enucleated entire without rupturing the cyst. The cavity from which it came was closed with sutures. No drainage was employed, and she made an absolutely uninterrupted recovery.

CASE 25.—*Colloid Goitre (Cured).*

Mrs. H., white, age about 30, was admitted to the Woman's Hospital of Maryland under Dr. Robert T. Wilson for some gynecological trouble. She had also quite a large parenchymatous or

colloid goitre, which was causing nervous symptoms, which Dr. Wilson asked me to remove.

Operation.—December 3, 1908, under local anesthesia and morphia and scopolamine. Patient in sitting posture. Right lobe of thyroid removed. Drainage provided, and patient made a good recovery in eight days. She had some elevation of temperature for a few days.

CASE 26.—*Simple Goitre (Cured).*

Mrs. R.; admitted to University Hospital July 8, 1909.

She is a white woman, 38 years of age, who has been under treatment for various troubles, and is referred to the surgical side on account of a lump in the neck, on the right side, the size of a hen's egg. This is smooth, movable and not tender, and was first noticed about 10 years ago, and has gradually reached its present growth. She complains of stiffness and pain in the neck, but is highly neurotic.

Operation.—July 9. Hyoscine, cactin and morphia used hypodermically as an anesthetic, with a weak cocaine solution infiltrated into the skin. She bore the operation without difficulty. The usual collar incision was made, three inches in length. The right lobe of the thyroid gland was removed, a small drainage tube introduced through a separate puncture, and the skin incision sutured tightly. She made an unimpeded recovery.

SURGERY OF THE KIDNEY.

By Alexius McGlannan, M.D.,

Baltimore.

(Continued from December Number.)

Perirenal cysts (perirenal hydronephrosis) are collections of fluid around the kidney. These tumors usually follow a lumbar injury, developing within a few weeks without sudden pain or a change in the general condition of the patient. The cyst may be cured by repeated aspirations, or by incision and drainage. The fluid is yellow, usually alkaline, and contains a little proteid and salts and a few leucocytes. It is not urine. Minkowski (*Mitteil. a. d. Grenzgebiet. d. Medic u. Chirurg.*, 1906, Vol. XVI, p. 1705) reports a case and gives references to the literature. The most important point about these cysts is their distinction from traumatic hydronephrosis.

Variations in the position of the kidney may be congenital or acquired. The degree of displacement varies from within a few centimeters of the normal location to a position in some other portion of the abdomen. The congenitally misplaced kidneys all show abnormal origin or length of their blood vessels. The acquired misplacements will show alteration in the direction of the vessels. The misplaced kidney is usually firmly fixed in its position.

Mobile Kidney (Nephroptosis).—The acquired form is commonly called movable kidney, and limited to those organs that can be moved freely back of the peritoneum. The congenital variety is called *floating* or *wandering kidney*. In this rare form the organ has a peritoneal pedicle, the mesonephron. A *dislocated kidney* is a previously movable organ that has become fixed in an abnormal position.

Misplaced kidneys may undergo any of the pathological changes that affect the organs situated in their normal position. Unless such change occurs the misplaced kidneys are not likely to give rise to symptoms. The possibility of a pathological misplaced kidney should be borne in mind, especially in the diagnosis of obscure acute or chronic abdominal diseases. Johnson (*Annals of Surgery*, Vol. 47, p. 797) reports a case of pyonephrosis in a congenital misplaced kidney. The symptoms were abdominal, but with turbid urine. The kidney was removed through the abdomen.

Clinically the two forms of movable kidney merge into one another and cannot be distinguished except at operation. A wandering kidney may exist for years and be symptomless, until an injury or some other accident lends to its discovery. In the etiology of the acquired variety trauma is of the greatest importance, especially when the condition is unilateral. We have already considered Wyss' argument regarding the squeeze and pull sustained by the kidney when rising from a crouched position against great resistance. A fall on the feet or a blow over the kidney may cause a movable organ. In all of these cases, however, the mobility gradually develops. In cases where the sudden development of symptoms after an injury has led to the discovery of a movable kidney it is practically always a part of a general splanchnoptosis. Relaxation of the abdominal wall and abnormalities in the shape of the trunk, altering the contour of the cavities of the loin, are the commonest etiological factors.

Harris (*Journal of the American Medical Association*, June 1, 1901) arbitrarily divides movable kidneys into three degrees, namely:

1. In bimanual examination one-half of the kidney can be grasped and the kidney made to recede.
2. The palpating hands can be brought together above the kidney.
3. The kidney lies as low as the pelvic brim or is at or beyond the umbilicus.

Symptoms occur in three groups (Cheyne, *London Lancet*, April 24, 1909):

1. Indefinite symptoms. Giddiness, faintness, anemia, palpitation, general neurasthenic symptoms, etc. Neuralgia, with pain in the kidney, is the only particular sign of this group.
 2. Symptoms due to the involvement of the intestinal tract either reflexly or by pressure.
 3. Those due to twisting or obstruction of the pedicle.
- Dietl's crises, the most characteristic symptoms of movable kid-

ney, belong to the last group. These crises are sudden, severe attacks of kidney colic, with nausea and vomiting, collapse vertigo, chills and subsequently fever.

Treatment.—In cases associated with general ptosis of the viscera, and in the markedly neurotic patients, mechanical support is better than operation. A special corset with an air pad over the kidney region should be put on while recumbent and worn constantly. The operative treatment is by lumbar nephropexy.

Essential Hematuria.—This is a condition in which blood occurs in the urine constantly or with intermission, and in larger or smaller quantities, without any apparent change in the kidney. Each year finds a certain number of cases removed from this group and placed in their proper pathological position, but there still remain cases of hematuria without appreciable cause.

Pilcher (*Annals of Surgery*, Vol. XLIX, p. 652) reports cases of renal varix—angiomatous disease of the papillæ of the kidney—that gave the symptoms of essential hematuria. Schwyzer in the same journal, page 628, describes hemorrhages and epithelial desquamation found by microscopic examination of slices of tissue removed from the kidney at operation for the relief of essential hematuria and nephralgia.

The treatment of this condition is by nephrotomy for exploration, and in the absence of any demonstrable lesion to explain the hemorrhage, by a buried catgut suture, so placed that it surrounds the deep veins between the papillæ. Pilcher considers that when the nephrotomy is done in Broedel's line this suture will include six of the main connecting venous radicles of the kidney, and in this way destroy the varicocities, just as multiple ligation cures varicose veins elsewhere. Pilcher recommends excision or burning with the cautery for varicocities of appreciable size.

Nephralgia is a condition of pain in the kidney to account for which no demonstrable lesion can be found. The pain varies from a slight uneasiness to severe colic, and the condition may be associated with hematuria. Schwyzer (*loc. cit.*) has found microscopic lesions in the kidneys of patients suffering from nephralgia. Nephralgia may occur as a visceral crisis in erythema multiforme. Osler has reported several such cases (*American Journal of Medical Sciences*, January, 1904). Wyss (*loc. cit.*) reports a case diagnosed neuralgia in which operation revealed a pelvic abscess that was causing intermittent closure of the ureter. The kidney was normal. Severe colic will justify exploratory nephrotomy. If no other cause is found, the suture advised under essential hematuria should be put in.

Amicrobic Nephritis.—Acute and chronic inflammation of the kidney occur without bacterial infection of the organ. Certain cases seem due to toxins, as, for instance, the nephritis of scarlet fever, etc. Other cases are associated with arteriosclerosis, and the so-called chronic Bright's is an end result of either an acute or a long-continued alteration of the nutrition of the kidney. For the most part these conditions are not treated by surgical opera-

tions, but decapsulation, devised by Edebohls, has given good results in a number of incidents. In acute toxic nephritis the anuria and uremic symptoms may be relieved at once by decapsulation, especially if it is associated with puncture of the kidney.

Schmidt (*Deutsche Zeit. f. Chirurg.*, 1905, Bd. 78, p. 296) reports a case of decapsulation for acute scarlatinal anuria, and attributes the successful result to the relief of tension in the organ and its effect on re-establishing the local circulation. Treplin (*Deutsch. Med. Wochenschrift*, January 21, 1909) reports a case of acute nephritis with hematuria and kidney pain occurring in the course of an osteomyelitis. Decapsulation of the swollen red kidney resulted in the cure of the condition.

Edebohls (*Trans. Surg. Section, A. M. A.*, 1908) gives a report of the immediate and remote results of 102 cases treated. In this he advises the operation for every sufferer from chronic Bright's disease who has a reasonable expectation of not less than a month of life without operation. He regards retinitis albuminuria a grave sign in nephritis, and therefore a contraindication to operation.

Decapsulation has given good results in the hands of other surgeons. Brewer (*loc. cit.*) reports two cases of chronic nephritis in which the operation was followed by tremendous improvement in the general condition of the patient, although the operation was not performed until medical means and aspiration, etc., had been exhausted. In an acute unilateral case he obtained complete restoration of function of the kidney. Garré (*loc. cit.*), on the other hand, has had little encouragement from this operation.

The changes in the kidney that follow decapsulation are important factors in determining the true value of the operation. Edebohls devised the operation on the theory that removal of the imperious capsule would lead to development of new blood vessels around the kidney and consequent increase in its circulation. Zaaiger (*Mitteil. aus den Grenzgeb. d. Medic. und Chirurg.*, 1905, Bd. XV., p. 421) reports the results of experimental investigation of the circulation of the kidney after decapsulation. His experiments are based on the fact that the kidney cortex receives a certain amount of nutrition from the vessels of the capsule. He first studied the degree of necrosis, which took place in a certain length of time (three days) after ligation of the renal artery, and in another series ligated the artery several days after performing decapsulation, and occasionally also after scarification of the cortex. He compares the necrosis occurring in each series and concludes that a new capsule thicker than normal is rapidly formed; that in general the anastomoses from this capsule do not equal those of the normal capsule, but, on the other hand, that they are greater than those of the normal capsule near the fine scars of incisions into the kidney tissue. According to these experiments, decapsulation should always be combined with scarification or incision of the kidney. Girgolauff (*Zentralblatt f. Chir.*, 1907, XXXIV, p. 1444) advises omental encapsulation in addition to decapsulation.

TUMORS.—Kuester (*Deutsche Chirurgie*, 1902) states that tumors make 10 per cent. of all kidney lesions. He divides tumors of the kidney into those developed in the capsule, in the parenchyma, and those of adrenal origin. Fibrous tumors are commonest in the capsule. The tumors of the parenchyma may be adenoma, adenocarcinoma or carcinoma developed from the epithelium of the tubules. In the pelvis the tumor is likely to be a papilloma. Angioma and angiosarcoma develop from the blood vessels of the parenchyma. Simple sarcoma develops from the interstitial connective tissue. Adrenal tumors are hypernephromata.

Kidney tumors are usually friable. In their growth necrosis and cyst formation are common. Calcification of parts of the tumor results from urinary deposits. When a tumor communicates with the renal pelvis masses of cells usually occur in the urine. The vessels are involved early in all kidney tumors, therefore metastases occur early and frequently. Hence these facts make ligation of the vessels dangerous, because of the probability of dislodgment of a thrombus.

The general symptoms of tumors of the kidney may be very slight or entirely absent. Often attention is called first to the kidney tumor by the appearance of a metastasis. This is especially true of hypernephroma. The presence of the tumor is often discovered in a search for the cause of hematuria. Kroenlein (*Centralblatt f. Chirurg.*, 1905, XXXII, p. 1022) lays especial stress on the importance of this symptom of tumor. Renal colic may occur from distension of the capsule or be associated with the passage of blood clot down the ureter. These clots may be passed in the urine in the shape of casts of the ureter. A rapidly developing varicocele is a symptom of a kidney tumor on the same side (Guyon's symptom). The same is true of unilateral edema and of unilateral varicose veins of the legs.

Carcinoma and sarcoma of the kidney do not differ in any essential way from tumors of these classes found elsewhere. It is interesting to note that in Kroenlein's article (*loc. cit.*) it is stated that up to 1901 all his tumors of the kidney were called carcinoma. Since then the diagnosis of hypernephroma or sarcoma has become frequent.

Hypernephroma.—These most interesting tumors were first described by Grawitz, who observed them at autopsy. The tumors arise from areas of adrenal tissue deposited in the cortex of the kidney. According as these adrenal nests are derived from cells of medulla or cortex of the suprarenal gland we have variations in the character of the cells of the tumors. The tumors are especially prone to fatty, colloid and cystic degeneration, and are usually hemorrhagic. For this reason their gross appearance is mottled, consisting of mixtures of gray nodules with yellow fatty areas, dark red and brown hemorrhagic areas, and clear cysts with connective tissue stroma. In the benign type there is an imperforated capsule, and the histology is more distinct than in the infiltrating malignant type. Schmeiden (*Deutsche Zeit. f. Chir.*, 1903,

LXX, p. 453) reports the successful transplantation of adrenal tissue into the kidney.

Hypernephromata are especially likely to give metastasis to bone and to give rise to delayed metastasis developing late after operation. Scudder (*Annals of Surgery*, Vol. 44, p. 851) reports a case of metastatic hypernephroma in the head of the humerus, and gives a study of 11 cases of hypernephroma occurring in patients of the Massachusetts General Hospital.

Albrecht (*Archiv. f. Klin. Chir.*, 1905, LXXVII, p. 1073) brings out the most important point concerning metastatic hypernephroma. The bone metastasis is practically always the only metastasis. Therefore, unless there is some strong contraindication, the kidney containing the tumor should be removed, as well as the bone focus. Complete studies of these tumors, with bibliography, are given by Kuznich (*Beiträge z. Klin. Chir.*, 1905, XLV, p. 185, illustrated) and by Albrecht (*loc. cit.*) Both of these are reviewed by Bloodgood in *Surg. Gyn. and Obst.*, Vol. II, p. 241, etc.

Weil (*Annals of Surgery*, Vol. 46, p. 422) calls attention to a variety of hypernephroma simulating cystic kidney. Keenan and Archibald (*Jour. of Med. Research*, Vol. 16, p. 121) report a fatty tumor of the kidney suggesting metamorphosis of adrenal cells into true fat.

Lipomacea (lipomatosis renis).—In this condition the kidney becomes replaced by fat. It is generally the result of a very slow chronic suppuration due to impacted stones in the pelvis. Eisen-drath (*Annals of Surgery*, XLVIII, p. 709) reports a case with an illustration.

Congenital Cystic Kidney (Cystic or Polycystic Degeneration of the Kidney, Multilocular Renal Cysts).—This disease may go undiscovered until autopsy reveals it as the cause of death from uremia or cerebral hemorrhage. It is sometimes so greatly developed before birth that the enlarged cystic kidneys constitute an insurmountable difficulty at parturition. When the cystic enlargement develops gradually the adult may come to the surgeon for relief of dragging pain in the loin, or on account of a renal tumor or a movable kidney. The disease is practically always bilateral, although one kidney may present marked advance in the extent of the degeneration.

Diagnosis is difficult on account of the insidious character of the symptoms. Lund (*Trans. Surg. Sect., A. M. A.*, 1906) divides them into two groups, corresponding to the three stages of the disease described by Milward.

The first stage is symptomless.

The second stage, lasting from a few months to several years, is that of subjective symptoms and objective signs. These are persistent dull, aching pains in the region of the kidney, usually worse during the day. Flatulence, headache, gastric disturbances and constipation occur. Often the kidney is movable and tender. Severe colic may take place. Lund thinks this may be due to

hemorrhages into the cysts. Suppuration in a cyst may occur, and requires incision and drainage.

The urine shows little change, because, as a rule, in this stage there is enough active parenchyma present to carry on perfect function. Pus may be present, and some blood is fairly constant. A definite hematuria may follow hemorrhage into a cyst.

The third stage is that of deficient kidney function, and the symptoms are uremic.

The etiology of these cystic kidneys is a subject of controversy. Orth, and Virchow, in his revised opinion, state that the cysts are due to a fetal obliterating inflammation of the papillæ. On the other hand, there is much evidence to show that the lesion is due to an embryonal defect, in which the straight tubules fail to make accurate union with the developing glomeruli. Nicholson (*Annals of Surgery*, Vol. 48, p. 241) reports a case in which the histological study showed that the cysts developed from dilated tubules, and not from glomeruli. This case is evidence in favor of the inflammatory rather than the developmental origin of the disease.

The appearance of a cystic kidney is characteristic. The whole organ is studded with cysts, in size from that of a pin head to an orange. The surface is knobby, with cysts of varying size, and in color pearly, green, red, brown and all intermediate shades. The cyst walls are thin, vascular, and the folds on the inner surface of the larger ones mark the coalescence of several smaller cysts. The fluid contains urinary solids, and probably is urine that has become diluted by blood and serum. The cysts are separated by renal parenchyma and by fibrous tissue. The small cysts are lined by flat epithelium, but in the larger ones this is absent.

Treatment.—Operation will be required for the relief of symptoms of tumor, or because of suppuration or uremic symptoms. Nephrectomy should never be done unless there is very positive assurance that the other kidney has perfect function and is free from marked cystic disease. The latter fact can be learned only by means of exploratory incision. Nephrotomy, with drainage and suture of the kidney in the loin, is much the safer and more rational procedure.

Determination of the Functional Activity of the Kidney.—At the 1905 meeting of the German Surgical Congress this subject was discussed exhaustively. The proceedings are reported in the *Archiv. f. Klin. Chirurg.*, 1905, Vol. 75. This determination is of the utmost importance before nephrectomy is performed, in order that the functional activity of the other kidney be known. The collection of the separated urine from each kidney is therefore the first step in the process. This may be accomplished either by using one of the intravesical segregators or by ureteral catheterization. Authorities are practically unanimous in favoring the latter method. Richter (*Mediz. Klin.*, 1905, No. 30) states that the catheter must be left in the ureter for at least two hours, in order to avoid error from the reflex polyuria often set up by its introduction.

Keydel (*Zentralblatt f. Chir.*, 1905, No. 29, p. 769) judges the condition of the kidney in part by the character of the flow from the ureteral catheters. An equal and regular flow from both indicates healthy kidneys. An irregular flow shows the presence of disease, and a slowing of one side indicates the kidney involved.

Casper (German Surgical Congress) favors the use of *phlorizin* to determine the functional activity of the kidney. One cc. of a .5 per cent. solution of this drug is given hypodermically and the urine collected by means of the ureteral catheters. Within an hour a healthy kidney will secrete sugar, while a diseased one will not do so at all, or else the secretion will be greatly delayed. When both urines contain sugar, a quantitative estimation will determine the relative activity of each kidney.

Indigo Carmine.—An intermuscular injection of 4 cc. of a 4 per cent. solution of this dye will be followed by the secretion of dark blue urine by a healthy kidney in from seven to fourteen minutes. According to Thomas (*Surg. Gyn. and Obst.*, Vol. VIII, p. 368), a delay in the appearance of the blue urine or paleness of the blue color indicates corresponding lack of function of the kidney secreting this urine. A total absence of secretion of blue urine means very serious disease of the kidney.

Cryoscopy.—Kummel (German Surgical Congress) considers this to be a most important method of determining functional activity. It consists in estimating the freezing point of the blood and of the urine. The normal freezing point of the blood is $- .56^{\circ}$. When this falls as low as $- .60^{\circ}$ it indicates dangerous molecular concentration of the blood. At the same time variations in the freezing point of the urine show diminished concentration.

Electrical Conductivity.—Turner (*Edinburgh Med. Jour.*, April, 1907) describes a method for determining the molecular concentration of the blood and urine by means of an estimation of their electrical conductivity. Like cryoscopy, this method depends on the physical law that the freezing point and conductivity of liquids varies with the contained number of molecules.

Catalytic Activity of the Blood.—Winternitz (*Jour. Experimental Medicine*, January, 1909) has shown by animal experiment that the catalytic power of the blood diminishes as the function of the kidney becomes impaired. This function of the urine remains unchanged. Catalytic activity is determined by mixing a few drops of diluted blood with a few cc. of hydrogen dioxide solution and measuring the quantity of gas evolved. This test is now being studied in its clinical application.

Rovsing (German Surgical Congress) disapproves of all these methods of determining functional activity. He finds them all less reliable than the study of the urea excretion and the ordinary chemical and microscopical examinations of the urine. The 24-hour quantity of urea should be determined in the mixed urine. Then the urea in each of the catheterized specimens. From these estimations we can judge the amount of work each kidney is doing. In all cases it is wise to do this, and it is essential before doing

nephrectomy, because by the ureteral catheter and the examination of the urine we learn whether the other kidney exists, whether urine comes from it, and whether or not this urine is free from pathological constituents.

All authorities agree that while the determining of functional activity by clinical methods is valuable, occasionally direct inspection of the kidney is the only way to be certain of its presence and activity. Moreover, too much stress must not be laid on the inactivity of the other kidney. A healthy or slightly diseased kidney may be so inhibited by reflexes from its diseased mate that it will appear much more deranged functionally than is really true.

OPERATIONS ON THE KIDNEY may be done either through the abdomen or through the loin. The lumbar route, however, is the method of choice in most cases.

The incision for exposing the kidney varies with different operators. The most commonly used ones are:

1. Von Bergmann's. An oblique incision beginning at the upper margin of the twelfth rib at the border of the sacrolumbalis muscle and extending downward and forward to the junction of the outer and middle third of Poupart's ligament. The external oblique is divided the length of the wound, and the internal and transversalis in the upper portion.
2. König makes an incision straight down from the twelfth rib along the sacrolumbalis until it reaches a finger's breadth above the crest. It then bends sharply outward to the outer border of the rectus.
3. Kelly advises an oblique incision about three inches long made in the triangle formed by the tendinous processes of the oblique muscles, and just below the last rib. By blunt dissection the kidney may be exposed without ligating any vessels, and injury to nerves is easily avoided.
4. Alexander (*Annals of Surgery*, Vol. 47, p. 612) uses a curved incision, convexity backward, beginning at the lower border of the twelfth rib, about two inches from the angle made by this rib and the erector spinæ. The incision reaches the line of this muscle in its downward sweep, and is carried forward until its lower end is about two inches below the crest of the ilium. The deep incision follows the outer border of the quadratus and the latissimus dorsi.

The relative value of abdominal and lumbar nephrectomy depends almost entirely on the condition of the kidney to be removed. Suppuration, calculus, hydronephrosis, and, in fact, practically all conditions except very large tumors are better attacked through a lumbar incision. Walker (*Johns Hopkins Hospital Reports*) advises ligation of the vessels through an abdominal incision before lumbar nephrectomy for tuberculosis. Bland-Sutton (*Surg. Gyn. and Obst.*, January, 1908) cautions against the danger of including the renal pelvis when ligating the ureter in nephrectomy for hydronephrosis. He also advises separate ligation of the vessels of the distended pelvis in these cases.

NEPHROPEXY. The kidney is exposed by a lumbar incision, and fixed in its normal position by one of several methods:

1. Simple suture with catgut. The sutures are passed through the kidney and fix it to the fascia of the lumbar muscles near the vertebral column. Broedel (*loc. cit.*) has devised a special method of passing the sutures through the kidney.

2. The fibrous capsule is stripped from the kidney back to the hilum (decapsulation), and this fibrous tissue is sewed to the fascia of the lumbar muscles.

3. Harris (*Journal of the American Medical Association*, June 1, 1901) showed that in all these suture operations the space formerly occupied by the prolapsed kidney was left unfilled and made relapse very probable. He therefore brought the colon and the iliac fat up under the sutured kidney and fixed these structures by suture to the muscles.

4. Da Costa (*Modern Surgery*) devised a modification of Senn's gauze suspension. Four strips of iodoform gauze are united into two slings by fine catgut. The decapsulated kidney is hung in the slings in such a way that the catgut stitches are on the anterior surface. The kidney is then pushed into its proper place and the space beneath it filled with gauze. The packing causes the formation of a great mass of fibrous tissue around the kidney. The catgut suture is absorbed, and allows the gauze slings to be removed with less discomfort to the patient. The wound, of course, must be left open for gradual removal of the gauze.

PLASTIC OPERATIONS on the kidney and ureter are of great value in hydronephrosis and similar lesions. Fenger was one of the original workers in this field, and applied the principle of the Heinecke-Mikulicz pyloroplasty—the transverse suture of a longitudinal incision—to the widening of a strictured ureter. Anastomosis of ureter and pelvis beyond the obstruction, and implantation of the ureter in a new position are methods of overcoming obstructions.

Nephrostomy and *pyelonephrostomy* are required for abscess and stone. To reach the pelvis through the kidney Gerster (*Annals of Surgery*, Vol. 47, p. 1057) advises blunt instruments, followed by the finger. Tilden Brown (*loc. cit.*) advises incision of the ureter and the passage of a curved delicate forcep up through the kidney in order to draw the drainage tube down into the pelvis.

Lumbar drainage of the kidneys by permanent ureteral fistulæ is occasionally necessary. Devices that collect the urine and thereby make the life of the patient bearable are described by Loux (*Annals of Surgery*, Vol. 47, p. 149), by Watson (*Annals of Surgery*, Vol. 46, p. 430) and by Rovsing (*Annals of Surgery*, Vol. 46, p. 954).

SYDENHAM.

(1624-1689.)

TENTH OF A SERIES OF ESSAYS ON THE HISTORY OF MEDICINE FROM THE EARLIEST TIMES.

By H. M. Cohen, M.D.

CHAPTER X.

It must prove somewhat of a consolation to the present day young practitioner to glance over the history of medicine in England during the seventeenth century and find that, even in those far-gone days, the cry of an overcrowded profession was making its familiar rounds. Such was the case, in spite of the fact that, by royal decree, the granting of medical degrees was limited to the two universities of Oxford and Cambridge.

We find the regular practitioners complaining, even as many of us do today, of the superfluity of healers, and advising young aspirants to think twice before they entered the uncertain and often unremunerative field of medicine, and one of the philosophers of the day was wont to throw out the warning that "A physician cannot earn bread till he has not the teeth to eat it."

Those were, indeed, trying times, for, notwithstanding the overcrowded state of the regulars, there were the so-called surgeons, apothecaries, quacks, mountebanks, nurses, old women, herbalists and an army of other competitors to take away the few pro rata patients on the market. Indeed, we find that for every case treated by a regular physician perhaps 50 were prescribed for by the apothecaries, who, it would seem, were the real practitioners, although quite unpardonably ignorant of astrology and Greek.

The doctor's labors appeared to be mostly of a consultant character, for he was called in usually to either help out the apothecary or to receive the odium of having treated a dying patient. But the apothecaries did a flourishing business, and although profits were small, the "sales" were quick. It was the custom to get the physician to write out a prescription for a given case, for which the doctor was paid the usual or a cut-rate fee, and, once having the recipe in his possession, the apothecary made use of it as frequently and upon as many occasions as he deemed it expedient. Many of these irregular practitioners, however, had their particular physician, often one of note, whom they consulted regularly. This practice became so extended that certain coffee-houses were made famous, because, at stated hours, usually in the evening, the physicians congregated within their inviting rooms to await the visits of the numerous apothecaries who came to buy the prescriptions for their next day's rounds.

But the apothecary was a wise man in his generation, and he would only deal with the very best, so the ordinary *medico* came in for very little of the pickings, and one can picture his chagrin at having to leave the coffee-house unconsulted!



THOMAS SYDENHAM

(1624—1689).

Guy Patin declared that the apothecaries had formerly been only valets of physicians, but that they were head valets, who gilded the pill for themselves and left the bitterness to the physicians.

Then there were the out-and-out quacks, who had not even the apothecaries' consideration for the physician. These charlatans and empirics and astrologists had no need for the regular recipes, for they could cure, or claimed to cure, without any such tomfoolery. All they needed was a piece of stone, which they smartly enclosed in a piece of silk, to which they tied a string, and, for a consideration, this combination was permitted to be worn by a sufferer of gout or fever, or for any other disease, until the afore-said ailment or ailments disappeared.

There were quacks of every variety, from the great benefactor who devoted his entire life to the discovery of the marvelous ague eliminator to the more humble but equally sacrificial vender of the macerated elephants' teeth for the cure of the smallpox.

It must be admitted that this was a rather rapid fall for the genus quack, for, as originally coined, this term was intended to identify only the followers of the so-called Chemical School of Paracelsus and Van Helmont, who introduced quicksilver, or, in German, "queck salber" or "*quack* salber." The users of this drug were therefore called "Quacks," and, as the introduction was a much-opposed innovation, it was not long before the term became synonymous with charlatan and mountebank.

So it will be seen that the regular practitioner had his trials and tribulations even so far back as the seventeenth century, and, in so far as the cry of the "overcrowding of the profession" is concerned, the confreres of Harvey and Sydenham appear to have suffered from the self-same complaint.

Truly, that was a wise axiom which declared that there was nothing new under the sun!

Let us pass down our profession a few hundred years and make our way into the sacred portals of a seventeenth-century church.

"The church door shall no sooner be opened, but *ecce* Mr. Doctor, sitting in the most visible seat, Grave, Deaf, Dumb and immovable, as if an apoplexy of Devotion had seized him; out of which his apothecary is to raise him, by knocking, at half-sermon, at his pew door, to fetch him away, post, to a dying patient, by which means he draws the eyes of the whole congregation after him; but, instead of going to the pretended House of Visitation, they both drop into a cabaret, there to pass the fatigue of a forenoon Sunday. This knack of confederacy is to be repeated several Dominical days until it hath made an impression on the people that he is a man of importance and of great Physick business."

So Gideon Harvey puts the lie of originality to the modern Joe Millers, and thus we see that some of us of the present day are, perhaps, only copiers after all!

Far-fetched as this description may be, yet it gives us the idea of the state of the profession in the days of Sydenham, the trials encountered by the general practitioner, the difficulties to be over-

come by him and the devices he was sometimes compelled to embrace.

That the profession was "overcrowded" in the early years of the seventeenth century may or may not have been true, just as the same question is argued *pro* and *con* in the present day, but it appeared really not so much an overcrowding of doctors as it was the taking away from the profession much of its legitimate field by the apothecaries.

Had the medical men been able to control the field this ancient cry would not have been justified. But we find that the regulars, as a result of their bombast and exclusiveness, and their everlasting backbiting and quarreling, added to their poor training, had alienated from themselves the respect of the masses, who cared very little if their medical adviser could write Greek or Latin or even propound the various philosophical explanations of the existence of the soul. What the seventeenth century patient wanted was very much what our own sick client of today demands, viz., quick relief. But let us again quote that old cynical chronicler Gideon Harvey, and observe what the sufferers really received:

"The Infant-physician is so completely dressed up with school and academic ornaments and some new tinkling notions in medicine that you may hear the clapper of his tongue echo from the east to the west gate of your town. Introduce him to a patient, and grant that he, by appuising or resting his velvet body on his Japan crutch and fixing his intellect, by drawing the broad-brimmed beaver over his eyes, seemeth to mimic a decrepit gravity, and by that to weigh himself down to the bottom of your belly to rummage for the disease. When he wakes (for he has only been in's dumps) out of his brown study, he shall no more know the distemper or the cause of it than the skipper who has never tossed on the ocean before pretends to find out Bermudas by his Waggener. Nevertheless, doth he adventure to call for paper and ink, to figure down a remedy he never saw before, being only acquainted with the bare name of it."

Although the apothecary had, as a rule, very little learning, nevertheless he was usually a man of common sense and quick perception, and the inexperienced medical man, whose previous training was almost nothing, to which was added the burden of a top-heavy classical education, found in him a conquering competitor.

In those days it had not yet become the custom for the student to gain practical experience in hospital work, and, as far as the English physicians were concerned, only those who went abroad ever had this advantage.

But the apothecary had another and even greater advantage over the regular practitioner. His calling and training made him familiar with those great tools of the "trade"—drugs—and he was thus in a position to begin where many of the medical men really left off.

The education of the medical student appears to have been in that day, as it is, unfortunately, in many instances even in our own time, woefully inefficient in the uses of drugs.

Then, as now, no doubt, the embryo, or newly-made physician, could diagnose a case of elephantiasis or syringomyelia, but when called to the bedside of a sufferer from a simple attack of acute bronchitis would be unable, very likely, to write out a proper prescription for it.

This paucity of practical training made it no difficult matter for the level-headed apothecaries to appropriate to themselves the greater part of the medical field, and it is not to be marveled at that when what was remaining was divided up among them, the physicians found that their profession was "overcrowded."

Of course, the rich were the principal patrons of the regular or college physicians, and as the ordinary fee was something like two dollars and a half a visit, a large sum for those days, it may be surmised that the amount was rather prohibitive. A 10-shilling piece was known as an "*angel*," and this fact gave rise to many jests at the doctors' expense. For instance, Baghurst, a well-known apothecary, was wont to declare that only the wealthy could afford to "die surrounded by angels." A herbalist remarked that "Physicians of the present day are like Balaam's ass—they will not speak until they see an *angel*."

But even a more striking distinction between the rich and poor is found in the work of John Gaddesden, who speaks of a medicine whose therapeutic value was so great that it was only to be given to the rich, and, in another instance, he recommends that double the dose be given to the wealthy patient.

The early years of the seventeenth century, however, proved the dawn of a better and more scientific era, in which medicine took an advance along with other sciences. A period of scientific research was inaugurated that has extended down to recent years.

In Italy the first academy of science was organized in 1603, but had a stormy passage on account of the opposition of Rome. In 1652 Leopold's Academy of Natural Sciences was formed in Vienna, and in 1663 the Royal Society of England was inaugurated. A few years later the French Royal Academy of Sciences made its appearance, and a chain of energetic workers was thus established over Europe.

In England we find that the orthodox physicians strenuously opposed this innovation, and derisively coined the term of "*Virtuosi*" for the followers of this newly-formed Royal Society, which numbered among its members such men as Robert Boyle and John Locke, two investigators who added so much brilliancy to that period.

Boyle and Locke were intimate friends of Sydenham, and the three helped to advance the interests of each other.

Sydenham has been called the English Hippocrates, and it would be equally appropriate to name him the Common-Sense Physician of the Seventeenth Century, for his practice was based essentially

on good judgment rather than on preconceived notions of more or less antiquated authority.

He was born at Wingford-Eagle, in Dorset county, England, in 1624. At the age of 18 we find him a student at Oxford, but upon the outbreak of the first Civil War he gave up his books for a soldier's life, and became a member of the Parliamentary Army. A Puritan by birth, he naturally took up the people's cause against the King, and followed its varying trials through the trying days of defeat and victory.

His two brothers, the one a colonel and the other a major, achieved much distinction, and it is said that one of them had a hand-to-hand conflict with the King's officer who was supposed to have been responsible for the shooting of their mother, a woman of patriotic character and strong Puritanic principles.

A coincidence worthy of note was the fact that while young Sydenham was engaged with the Parliamentary Army at Edgehill, the great William Harvey was looking out for the young princes on the other side. Thus the two greatest physicians of the same century were on the same battlefield at the same time, but with quite opposite hopes.

At the close of the war Thomas returned to Oxford, and in 1648 he received the degree of Bachelor of Medicine, although he had remained at the institution a very short time. It has been declared that the degree was what was known as a "created" one, being in accordance with a custom originated by Charles I, who gave out degrees the same as he created knights. The chancellor of the university made the recommendations, and the candidates were accordingly given the title.

As a result of the Civil War the Parliamentary Party came into power, and repaid many of its obligations in a similar manner. Thus Sydenham received as a reward for his military services the right to practice the profession which he so greatly honored and enriched in later years.

At the outbreak of the second Civil War Sydenham once more donned a military uniform and, although it is not positively recorded so, it is surmised that he was ultimately commissioned captain.

Upon again resuming civil life, he settled in Westminster, London, a neighborhood in which many of his former military comrades resided, and for several years struggled along in an endeavor to work up a practice. That his mind had not yet been thoroughly made up to continue in medicine is evidenced by his repeated expectancy of a departmental position promised to him by Cromwell. In 1659 he was finally rewarded by an appointment to the office of "Comptroller of the Pipe," a place having to deal principally with the Crown lands. But as the Restoration followed in the next year, it is extremely doubtful if he ever entered upon its duties. A short time previously he had been a candidate for Parliament, but failed of election.

After a brief course at Montpellier he once more resumed prac-

tice, having, in the meantime, taken advantage of the Act of Indemnity upon the restoration of Charles II, in May, 1660, and having passed the three examinations, was admitted a Licentiate of the Royal College of Physicians, in 1663, from which we may conclude that he had hitherto been practicing without a license. His doctor's degree was not taken until 1676.

Sydenham was not immune from that animosity and opposition that seems in all times to fall to the lot of real genius. Master minds pitted against a mental giant seems a pitiful condition. Yet such would appear to have been the state of affairs. For this great physician was made the butt of many drives from his distinguished confreres, men whose only claim to the recognition of posterity, however, appears to be in this connection.

But Sydenham triumphed in the end, though his true merits were first acknowledged on the Continent.

As has already been stated, Sydenham's practice was essentially what might be termed a common-sense one. He seemed to have lost sight of all preconceived notions of the medical art, and built upon a foundation of his own creation. Like Hippocrates, he put much faith in personal observation, trusting in what he concluded from his own experience and reasoning that judgment was of more value than theory.

His earliest published work was his "Method of Treating Fevers," the preface of which presents some excellent precepts:

"Whoever applies himself to medicine ought seriously to weigh the following considerations: First, that he will one day have to render an account to the Supreme Judge of the lives of sick persons committed to his care; next, whatever skill or knowledge he may, by the Divine favor, become possessed of should be devoted, above all things, to the glory of God and the welfare of the human race. * * * Finally, the physician should bear in mind that he himself is not exempt from the common lot, but subject to the same laws of mortality and disease as others, and he will care for the sick with more diligence and tenderness if he remembers that he himself is their fellow-sufferer."

To sum up the medical practice of Sydenham, it may be said that he followed out in a great measure the teachings of Hippocrates: Give nature a fair opportunity before you resort to art. Watch the manner of overcoming disease that nature employs, and follow it as nearly as possible.

Once, in the midst of an epidemic, he seemed at a loss as to the best treatment to follow. He says, as quoted by Russell: "I watched what method Nature might take, with the intention of subduing the symptoms by treading in her footsteps. Now, whilst I so watched the disease it departed. From thence, therefore, I considered that this method should be applied to all such cases as I might henceforth have to treat."

When it comes to administering radical and powerful treatment, he advises us to make haste slowly.

So far as his method of treatment can be learned, it appears to

have been principally *evacuant*. Purgatives, bleeding, sudorifics, he resorted to regularly, although not always with complete confidence. In fact, he recognized the limitations of the medical art, and employed these means often under protest, declaring that they would have to do in the absence of better means.

His principal fame resulted from his advocacy of the *cooling* or expectant treatment of smallpox. He also introduced the tincture of opium, and was the greatest exponent of the use of Peruvian bark in ague.

This latter disease was carrying off an average of one-fourth of the population of England, but as soon as the new treatment became popular, the mortality was reduced to almost nothing.

The bark was originally produced in Peru, where it had been employed to cure the Countess of Cinchona of an ague which threatened her life. In 1639 it was brought over by the Jesuits to Spain, but its employment was vigorously opposed by many regulars. A medical writer who had strongly condemned its use was treated by his confreres "as if he had relieved the world of a monster or a pestilence."

It will, therefore, be seen that it required more than ordinary courage to openly make use of Peruvian bark, and in becoming a defender of this beneficent discovery, Sydenham laid himself open to the criticism of many of his confreres. But in this, as in other instances of a like nature, our physician proved himself quite a freethinker.

Sydenham, although not always claiming that it was the best treatment, recommended and practiced venesection in a long list of diseases and conditions; in fact, we find him bleeding his patients at the slightest opportunity, even going so far as drawing blood for the treatment of nose-bleed. In hemorrhoids he "bleeds to 10 ounces from the arm." His treatment for vomiting and spitting of blood consisted of drawing about 10 ounces of blood from the right arm, to be followed, next morning, by a purgative. This bleeding was to be kept up several times if necessary. He also recommended bleeding in whooping-cough, mania, chorea, dysentery, diarrhea, colic, rheumatism, smallpox, continued fever, pleurisy, erysipelas and a long list of other conditions, proving that, notwithstanding his advanced learning, he was not without the weakness of his age.

One of the curiosities of treatment is contained in the report he makes of the case of a Mrs. Houlston, who, "after a chronic fever, was falling into a fatal-like diarrhea. I caused her son, a plump, hot lad of 13 years of age, and her nurse's son, of six or seven years, to go to bed to her, naked, and to lie, the one close to her belly, the other close to her back. The very same course I took with Mr. Little, who had a fever about seven weeks, and, at that time, August, 1662, was so far spent that his doctors judged him a dead man. I told his wife that nothing could preserve his life but the putting a boy to bed with him, so she procured a link-boy to lie close to him all night, and the next morning I found his

fever almost off. The very same way I cured Bishop Monk's lady."

The above was no doubt in keeping with his practice, for he never hesitated to resort to every possible simple method of bringing his patients to recovery.

Many anecdotes have been told of Sydenham; some, no doubt, may be somewhat overdrawn.

He was once called in to see a case after several other physicians had succeeded in causing the patient to be near the "borderland" as a result of the "lowering" treatment instituted. Sydenham "conceived that this was occasioned partly by his long illness, partly by the previous evacuations and partly by *emptiness*. I therefore ordered him a roast chicken and a pint of Canary."

Blackmore decided to take up a course in physic, and called on his friend Sydenham to advise him as to what authors he should read. "Try *Don Quixote*," was the reply; "it is a very good book. I read it still."

Once, when twitted about his failure to give any treatment to a certain patient, he remarked that he had "consulted his patient's safety and his own reputation most effectually by doing nothing at all."

Sydenham had a patient whom he could not cure. He sent him to a Dr. Robinson, at Inverness, who, he assured the man, was wonderfully clever, and would positively cure him. The patient, who was a man of fortune, set out at once upon the long journey with the most sanguine hopes. But upon arrival at his destination he sought in vain for the physician who had such marvelous powers. As a matter of fact, no such doctor existed, upon learning which he returned in all haste to Sydenham and declared angrily that he had been made a fool of. "But," inquired Sydenham, "are you in better health?" "Yes," answered the irate gentleman, "I am well now, but no thanks to you." "No! But you may thank Dr. Robinson for curing you. I wanted to send you a journey with an object in view, which, I knew, would do you good. In going, you had Dr. Robinson in contemplation, and in returning, you were equally busy thinking about scolding me."

In his published treatises he observed the greatest simplicity, taking especial pains, evidently, to put down the cases as they appeared to *him* and the treatment that *he* found most applicable.

His great success brought him during his lifetime the opposition of many confreres, and, as Dr. Lettsom puts it, "for all his labors he only gained the sad and unjust recompense of calumny and ignomy, and that from emulation of some of his collegiate brethren and others, whose indignation at length arose to that height that they endeavored to banish him, as guilty of medicinal heresy, out of that illustrious society," meaning the Royal College of Physicians, which proves how little the stamp of disapproval signifies when founded on narrow-mindedness and bigotry.

Sydenham spent many of his declining days as a sufferer from gout, and died in 1689, at the age of 65. The original monument having disappeared, the College of Physicians replaced it in 1810.

Current Literature.

REVIEW IN GYNECOLOGY AND OBSTETRICS.

Under the Supervision of A. Samuels, M.D., Baltimore.

ABORTION.

ABORTION is a term applied to expulsion or extraction of the product of conception before the period of viability. From the legal point of view, the foetus is assumed to be viable after the sixth month of gestation; that is to say, about 180 days after fecundation. Until recently obstetricians hesitated to admit the viability of the foetus born during the seventh month, but since the introduction of the conveuse by Tarnier and the application of gavage to the feeding of infants born before term, the clinical view coincides more or less with the legal assumption.

Abortion, especially criminal abortion, has become remarkably frequent, and tends to increase. (1) All obstetricians are agreed in calling attention to this increase in their wards. Various learned societies have taken up this matter, which is fraught with such dire consequences for the nation. Criminal abortion is openly practiced nowadays. The address of disreputable places where the traffic is carried on by midwives and even medical practitioners is passed on from one to another. The price varies according to the period of gestation.

One of the motives that underlie the frequency of criminal abortion is the ease with which it can be carried out. By this we mean that antiseptic procedures, which have saved countless human lives, have, by an unexpected repercussion, been instrumental in sacrificing innumerable little beings by lessening the risk attending criminal abortion. Formerly the prevalence of post-abortive infective complications acted as a check, and made women think twice before incurring such grave dangers, but nowadays puerperal fever is less frequent, and it is easier to treat, so that the terror which it inspires no longer exists.

Causes.—The other causes of abortion are classed under three heads, according to their origin, *i. e.*, (1) from the father, (2) from the mother and (3) from the ovum.

Paternal Causes.—Syphilis, of course, must be accorded a foremost place. The syphilitic virus is the cause of frequent abortions, and we must always bear it in mind when no other explanation is forthcoming. As a rule, in these cases abortion follows abortion, until antisyphilitic treatment puts an end to the series.

Sexual excesses, fatigue and overwork, though not prohibitive of fecundation, appear to exert a disastrous influence on the development of the product of conception, so that it is lacking in vitality and is unable to go on to term. The diatheses no doubt acts in much the same manner; tuberculosis, cancer, chronic intoxications and extreme youthfulness of the father.

Maternal Causes.—These exert a predominating influence, especially when certain of them are associated with blemishes on the paternal side, *e. g.*, syphilis, alcoholism, etc. Sexual excesses provoke a sort of continual traumatism of the uterus, giving rise to a state of chronic congestion predisposing to miscarriage during the first few weeks of marriage. Similarly, in some women, the approach of the monthly period determines congestive phenomena in the gravid uterus, which goes far to explain certain cases in which abortion takes place regularly at the menstrual period. Miscarriages in plethoric women and hemophilics belong to this category.

All acute pyrexial diseases—variola, measles, scarlatina, typhoid fever, pneumonia, etc.—may bring about abortion either as the result of hyperthermia and changes in the blood or in consequence of changes in the placenta.

Certain other affections may also interfere with the course of gestation, notably gravid albuminuria and gravid nephritis, heart diseases and gravido-cardiac troubles, chorea and incoercible vomiting which may, in some instances, necessitate artificial abortion.

Chronic constitutional maladies—tuberculosis, chloroanemia, etc., bad hygiene conditions, underfeeding and habitual physical overstrain—are all possible causes of interrupted gestation.

Other causes of abortion reside in the genital apparatus, retroversion and retroflexion of the uterus, the former giving rise to somewhat formidable accidents; uterine adhesions that constitute an obstacle to the normal development of the organ; fibroids, ovarian tumors, tumors of the Fallopian tubes, uterine prolapse, cancer of the cervix or body of the uterus, extensive lacerations of the cervical mucosa, ruptured perineum, etc. The uterus may be small—infantile—and unable to undergo the necessary development to accommodate the fetus, or there may be a sort of instability or atony of the organ that culminates in the same result.

Consanguineous marriages, unduly frequent pregnancy, certain conditions of age, indeed, even climate and altitude, appear to create a predisposition to readily-provoked abortion. We must not omit to mention sundry accidental causes, such as injury (blows on abdomen, falls, etc.), powerful emotions, fright, etc.

Intoxications exert an unquestionable influence. Cigarmakers and cooks are very liable to repeated abortion. We may also mention certain drugs which are credited with an ectopic action, such as apiol, ergot, rue, savin, quinine, absinthe, iodine of potassium and permanganate of potash.

Among the many causes just enumerated the action of some is indubitable: syphilis, pyrexial diseases, gravidic albuminuria, traumatism, etc., while others only exert their influence in women specially predisposed to abortion. In the latter case it is difficult to assign the degree of influence with which they should be credited.

Causes Connected with the Ovum.—The cause of the premature expulsion of the fetus will often be found in changes that have taken place in the ovum itself. They may be lesions of the pla-

centa consequent upon decidual endometritis, or degeneration of the chorionic villi, or other changes in the placenta. A frequent cause of abortion is the vicious insertion of the placenta. We may also mention the hydramnios, multiple pregnancy and death of the fetus.

Abortion may be provoked for therapeutical purposes under three conditions: Incoercible vomiting, narrowing of the pelvis and uterine retroversion.

Symptoms.—According to the stage of gestation, ovular abortion may occur during the first 20 days; embryonic abortion from the 29th to the 90th day; fetal abortion during the fourth, fifth and sixth months.

The miscarriage may take place suddenly; the woman loses a certain amount of blood all at once; she thinks that the menses have returned somewhat in excess; pains set in, and expulsion may take place in a very short time.

As a rule, there are premontary signs, a sensation of lassitude, increased feeling of weight in the pelvis, obscure recurring contractions supervening at variable intervals, lumbar or crural pains with trifling hemorrhage. These premonitory signs vary with the period of gestation.

First Month.—Abortion during the first month often passes unnoticed, presenting as it does the appearance of delayed menstruation. It is rarely diagnosed as such, because the ovum is not discovered, although expelled intact. The women experience a few colicky pains, rather more than or about the same as at an ordinary period. The loss of blood is somewhat greater, and clots are passed along with membranous debris. As no signs of pregnancy have as yet been perceived, or are in any case very vague, as the loss of blood is but little in excess of an ordinary menstrual discharge, and as it coincides within a few days with the normal menstrual epoch, a first month's abortion usually passes unnoticed.

One fact, however, may be noticed which is not without importance: As a rule, ovular abortion passes unnoticed, and has no sequelae, but in criminal cases the woman may have been infected, and the practitioner called in may find himself in a dilemma, since there is nothing to direct his attention to the uterus. He is naturally tempted to attribute the fever to some cause which he will seek to discover elsewhere than in the genital area, for the patient, of course, will not put him on the track. The case will present still further difficulty should infection have taken place independently of any actual voluntary traumatism. In one case, which was thought to be typhoid fever, the real cause was only discovered at the autopsy. This source of error should be borne in mind in all cases of unexplained fever in women who may possibly have had a miscarriage.

Many cases of metritis owe their origin to an ovular abortion. For the same reason the woman who thinks it is merely a return of menstruation takes no precaution, does not go to bed, and, especially in married women, sexual relations are continued as usual.

This habitual traumatism ultimately determines a condition of uterine congestion manifested by increased size of the organ, pain, a feeling of weight in the pelvis and lumbar region, the persistence of the discharge, the supervention of leucorrhea and, ultimately, abortion.

Second Month.—Here the disturbances are more pronounced. The uterus has undergone a certain increase in size, and is already hypertrophied, the signs of pregnancy are more marked, and the woman is cognizant of her condition. Uterine contraction is stronger, more painful and the loss of blood will also be greater, so that this group of symptoms suffices to establish the diagnosis of abortion.

As a rule, the hemorrhage sets in first, preceding contraction. The hemorrhage detaches the ovum, and uterine contraction carries it a step farther. Little by little the ovum is pushed toward the cervix, which partially opens, its orifice being blocked by clots. Finally the ovum is expelled, membranes and all. The membranes, however, may be ruptured.

Abortion during the second month is more protracted in presence of a living fetus, the adhesions are tough and the hemorrhage more profuse. Uterine contractions occur first in these cases, causing detachment of the ovum and its expulsion. With a dead ovum, expulsion takes place more rapidly, and almost without loss of blood.

On vaginal examination the cervix is felt to be soft, the uterus displaced downward and enlarged, the vaginal culs-de-sac distended and enlarged. If we watch the stages of abortion we find that the cervix does not become effaced, but half opens, so as to allow the ovum to pass.

From the Third to the End of the Fourth Month.—At this stage the woman must be well aware of her condition, for she will have missed several menstrual periods, the belly has become distended, the breasts have become larger and sundry nervous and digestive disturbances will have made their appearance. In such patients a threatening abortion is manifested plainly. The earliest symptoms consist of lumbar and hypogastric pains of an intermittent character, followed by expulsion of membranous shreds and bleeding. Uterine contraction here plays the principle rôle, and extrudes the ovum into the cervical canal. Bleeding is variable in amount; sometimes it is trifling, in other cases abundant, or it may go on continuously, until the symptoms subside or the ovum is expelled. The hemorrhage may come on in attacks which recur every few hours, or, possibly, after several days' interval, without any marked change in the os uteri. The patient is rendered more and more anemic in consequence of these repeated small losses, which, indeed, may ultimately become grave by reason of their repetition.

On vaginal examination we find the uterus enlarged. Early in the case the os is felt to be patulous and soft, and the canal is filled with clot; later on we can make out the ovum through the dilated cervix. After a variable period of time the membranes rupture, and

the abortion takes place in two stages; first, the fetus; then the placenta. When the placenta is in its turn expelled, fragments of the decidua may remain in the uterus. It may happen that the afterbirth is not completely detached, the cervix closing, and another "labor" accompanied by free bleeding is required for it to be extruded. This may be delayed for a time, and herein lies the danger, for as long as the partially-detached placenta remains inside the uterus the woman is exposed to the double risk of infection and hemorrhage.

Fifth and Sixth Months.—During the fifth and sixth months abortion resembles normal labor more and more, *i. e.*, expulsion takes place in two stages; first, the fetus; then the afterbirth. True obliteration of the cervix takes place; the contractions are more powerful and more frequent, and hemorrhage is less copious than during the third and fourth months.

Course, Duration Complications and Prognosis.—From what precedes it will be seen that abortion does not run any fixed course and that its duration is uncertain. One may witness wide variations, according to the stage of gestation and in individual cases. Under the influence of traumatism, fright or violent emotion, abortion may take place very rapidly, the ovum being expelled almost at once, without the woman having had time to be aware of it.

In other cases it drags on, expulsion not taking place for some days. The contractions come and go, the bleeding occurs and subsides, sometimes slight, sometimes more copious, according to the extent of the placental detachment. The ovum may be retained inside the uterine cavity for a variable period by solid resistant adhesions or owing to the feebleness of the uterine contraction. Less frequently the abortion is delayed because the detached ovum is detained in the cervical canal. This has very inappropriately been called secondary cervical pregnancy.

The complications of abortion are (1) retention of afterbirth, (2) hemorrhage and (3) sepsis.

Placental retention may present several forms:

(1a) *Completely Detached Placenta.*—Under these circumstances the placenta may partially enter the cervical canal, by which it is grasped, or it may remain inside the uterine cavity, giving rise to hemorrhage and infection. As a general rule, dull pains supervene, that bring about its expulsion, or it may break down and be eliminated in fragments. Being deprived of its relation with the uterus, the afterbirth undergoes decomposition.

(b) *Completely Adherent Placenta.*—Here the situation is more complicated, since expulsion may be delayed from 20 to 30 days. The os closes, shutting in the afterbirth, the woman loses a little blood-stained fluid and matters come to a full stop. After a variable period, a few days to several weeks, the placenta becomes detached, this being announced by a return of the bleeding. Uterine contractions take place and expulsion is effected without the woman suffering in any way from the protracted retention. The placenta will be found to have undergone fatty degeneration, but

it is not otherwise changed. It has no odor, and does not present any signs of putrefaction.

According to some authors, the afterbirth as such may not be expelled at all, disappearing by a process of absorption, or coming away imperceptibly.

(c) *Partially Detached Placenta*.—These cases are particularly delicate, because they expose one to a double complication; hemorrhage on the one hand, infection on the other. The prognosis depends on the skill of the accoucheur and the measures he employs. It is easy to understand that the partially disinserted placenta, filling as it does the uterine cavity, paves the way to continuation of the hemorrhage, while the detached portion, being deprived of its vascular connection, may undergo putrefaction and cause septicemia. Sometimes fragments of placenta remain adherent, giving rise to metritis. Under these circumstances it is usually advisable to abstain from pulling on the partially detached placenta in order not to increase the hemorrhage, unless we have made up our minds to provoke artificial delivery and curette the uterus.

(2) *Hemorrhage*.—Hemorrhage, which is inseparable from abortion, may, by its copiousness and its repetition, engender a grave situation, especially in weak, debilitated persons. It may be accompanied by serious constitutional symptoms and signs of acute anemia, noises in the ears, pallor of the skin, disturbances of sight, small thready pulse and syncope. We must not allow ourselves to be unduly alarmed by this bleeding, especially if the placenta becomes detached and is followed by constitutional symptoms, which are more alarming than dangerous. Nevertheless, we must be prepared to act according to circumstances. The amount of bleeding varies, and the date of its appearance varies likewise. It may occur coincidently with the detachment of the ovum or when the placenta becomes disinserted, or it may be delayed in cases of placental retention until after the expulsion of the fetus. We must, as far as possible, control the hemorrhage, since it weakens the patient and predisposes to infections.

(To Be Continued)

THE ORIGIN AND PREVALENCE OF TYPHOID FEVER IN THE DISTRICT OF COLUMBIA. 1908. By M. J. Rosenau, L. L. Lumsden and Joseph Kastle, Washington. Government Printing Office, 1909.

The Treasury Department, with the co-operation of the Public Health and the Marine Hospital Service of the United States, has issued a bulletin under the above title. The report contains 160 pages, illustrated with many charts. The method of procedure applied to the investigation of the prevalence and origin of typhoid fever in the District of Columbia is fully set forth. The conclusions reached are ethical, and should be of great utility to sanitarians and health officials in pursuing original investigation.



JAMES BOSLEY, M.D.,
Commissioner.

C. HAMPSON JONES, M.D.,
Asst. Commissioner.

THOS. L. RICHARDSON, M.D.,
Asst. Commissioner,
Quarantine.

M. HARRY LAIB, Secretary.

Bacteriological Laboratory:
WM. ROYAL STOKES, M.D., Director.

Chemical Laboratory:
W. E. HOFFMAN, JR., Ph.D., Director.

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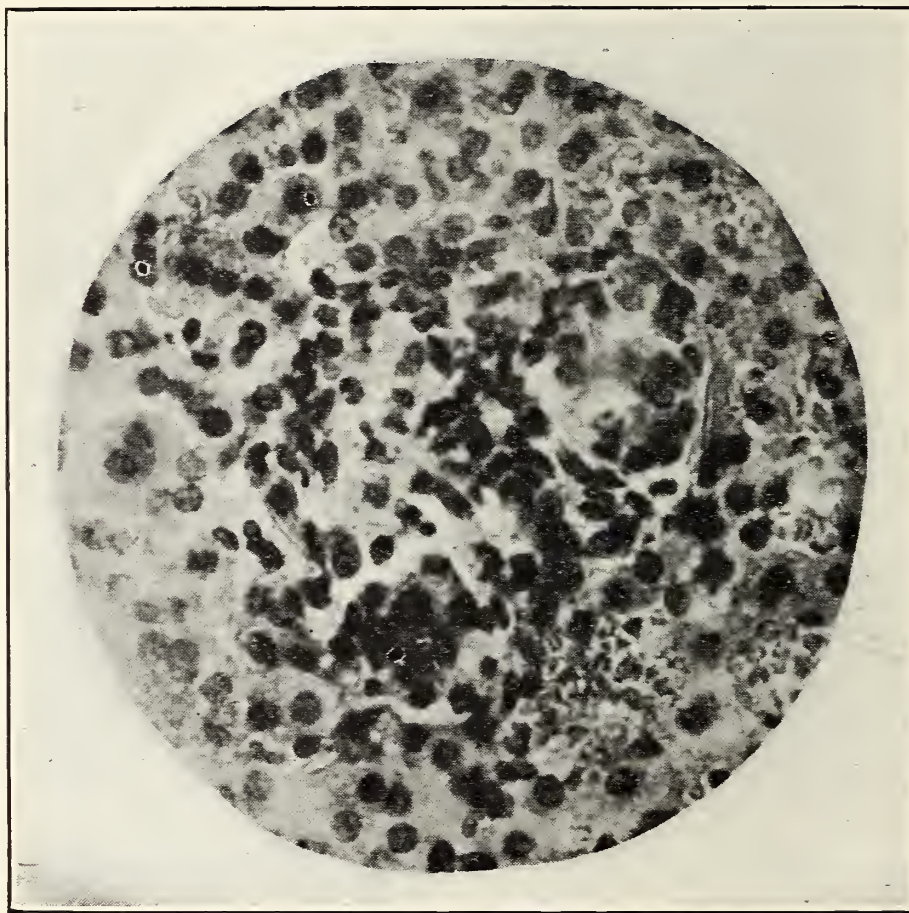
THE RELATION BETWEEN BOVINE TUBERCULOSIS AND TUBERCULOUS INFECTION IN THE HUMAN BEING.

THIS vexed question has received considerable attention from sanitarians, and as they practically all agree that certain forms of tuberculosis in human beings are caused by drinking the milk or by using milk products from tuberculosis animals, it is first necessary to examine the evidence upon which these opinions are based.

Tuberculosis is very prevalent among the cattle of dairy herds, as proven by statistics collected by Dr. Salmon, the former chief of the United States Bureau of Animal Industry. In over 140,000 cattle tested by tuberculin in a number of States in this country, he found that 14 per cent. were suffering from some form of tuberculosis. This high percentage, however, is due to the fact that these examinations were made among herds in which the presence of tuberculosis had already been suspected, but it can be taken as a general rule that from 2 to 4 per cent. of all animals in this country are suffering from tuberculosis.

This disease is easily communicated from one animal to another, and some very interesting experiments have been performed which demonstrate this fact. One or more tuberculous animals have been intentionally introduced into herds proven free from tuberculosis by the tuberculin test. In about two years from 18 to 20 of these animals developed tuberculosis. Healthy cows have also been confined in clean stables with several tuberculous animals, and in about one year all of the healthy animals developed tuberculosis. Healthy calves have also developed tuberculosis from drinking the

milk from tuberculous cows. The infection is transmitted in two ways: In the first place, suckling calves of tuberculous mothers will develop the infection. In the second place, the United States Agricultural Department, through the investigations of Schroeder and Cotton, has shown that large numbers of tubercle bacilli are voided in the intestinal contents. In this way the food of the animals, the stables, or the grazing fields are saturated by the dried manure containing thousands of these bacilli, and it has only remained to be proven that the tubercle bacillus can infect animals by means of the intestinal tract.



TUBERCLE IN LIVER PRODUCED FROM INFECTED MARKET MILK.

This has been amply demonstrated by the experiments of the English and German commissions and by the independent work of Ravenel in this country. Cows, calves, pigs, puppies, monkeys and other animals have been fed upon cultures of the bacillus of tuberculosis, upon tuberculous sputum, and upon milk and its products inoculated with this bacillus. All of these experiments have resulted in the production of widespread tuberculosis, usually with the formation of intestinal ulcers. Ravenel has shown, however, that the organisms of tuberculosis can pass through the mucous membrane of the intestine without producing any local lesions, and he recovered the organism in the chyle of the branches

of the thoracic duct four hours after the introduction of the infected material into the intestines.

Having proven the prevalence of tuberculosis in cattle and its easy transmission from diseased to healthy animals, the proof of its transmissibility from infected cattle to human beings has presented the next problem for solution. Clinical evidence has suggested for some time that tuberculous cows might infect children who drank their milk, and Klencke has collected the histories of 16 tuberculous children who were fed on milk from tuberculous cows. Ollivier traced 12 cases of tuberculosis in a boarding school to one tuberculous animal, and various other clinical observers have confirmed these findings.

The next point of evidence depends upon the fact that Theobald Smith has shown that the bovine type of the tubercle bacillus differs from the ordinary human type in three particulars. It is larger and stains more deeply than the human type; it is more virulent for animals, and on the other hand, the human type will acidulate glycerin bouillon, whereas the bovine type does not produce this reaction. The Royal English Commission actually isolated the bovine type of the tubercle bacillus in 13 cases of tuberculosis of the cervical glands or primary intestinal tuberculosis. The German and American observers have also demonstrated the presence of this bovine type in glandular and primary intestinal and mesenteric gland infection, and it may be set down as a general rule that tuberculous infection from cattle will only produce about 20 per cent. of these cases of surgical tuberculosis. Twenty per cent. of all cases of tuberculosis of the bones, joints and lymphatic glands is by no means a negligible quantity in preventive medicine, and it is important to prevent even these cases by proper measures.

Two more facts are important to consider in connection with this matter. In the first place, Ravenel cites several instances in which veterinarians have developed serious and even fatal infections, which developed from local tuberculous lesions obtained in performing autopsies upon tuberculous animals. In the second place, the examination of the market milk of Washington, New York and Baltimore has demonstrated the fact that the bovine tubercle bacillus is present in from 4 to 6 per cent. of all milks sold to the consumer.

The Health Department of Baltimore makes use of the following tests in detecting the presence of tubercle bacilli in the market milk.

*"Our method of searching for tubercle bacilli in milk consists in centrifugalizing 250 cc. of the milk in each of two centrifugal cups and collecting the sediment. The entire sediment is injected into the abdominal cavity of a guinea-pig. If the animal does not succumb to an acute infection we chloroform and kill it at the end

of six weeks, and remove the liver, lungs and suspicious glands for microscopic examination. These can be cut immediately by means of the freezing microtome method, but we harden the tissues in formalin and stain celloidin sections. If tubercles are found in the tissues of the animal, it is our intention later to send inspectors to the dairy farm to detect the tuberculous animals by physical examination or tuberculin."

In two years we have inoculated 179 guinea-pigs, and of these 88 lived over a month. These were all chloroformed and sections were made from the liver and lungs from all of these animals. Four of these animals showed tuberculosis, but the work up to the present time has simply been of an experimental nature, and for the purpose of demonstrating the tubercle bacilli in market milk. As mentioned above, it is our intention later to follow up these findings by rigid inspection, and by this means we hope to weed out a great many tuberculous animals from our dairy farms, or to revoke a man's license if the herds show tuberculosis of a character dangerous to the public health.

We present herewith a photomicrograph† of the tubercle as it appears in the liver of animals infected by tuberculous market milk. The appearance is typical of tuberculosis, as the causes of the other infectious granulomata are not present in the milk of infected cattle. The test, therefore, can be considered as a positive one for tuberculosis, and we feel sure that it will be useful in searching out the special plague spots among our dairy herds.

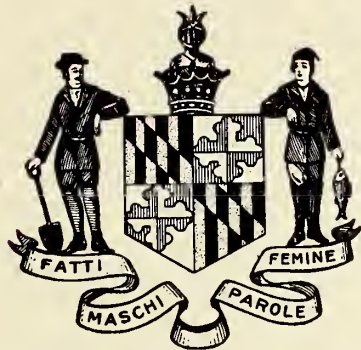
PREVENTION OF SURGICAL TUBERCULOSIS.

About 20 per cent. of all cases of surgical tuberculosis can be prevented by a rigid inspection of the dairy farms and the weeding out of tuberculous animals. This requires a very large corps of inspectors, entailing a large appropriation, and the State Board of Health and the Live Stock Sanitary Board should also take part in the prevention of this disease, not only in the large city of Baltimore, but in the entire State. Until all of these forces can be augmented, especially by a larger corps of inspectors and greater appropriations, it can be hardly taken for granted that all of the dangerous tuberculous animals have been weeded from the dairy herds. Until this is done it is safer to use pasteurized milk. This does not destroy the nutritive properties of the milk if carried out in bottles free from air at a temperature of 60° C. for 20 minutes. This destroys the tubercle bacillus and is an effective preventive against transmission of tuberculosis from cattle to human beings.

WM. ROYAL STOKES.

*Published in *American Medicine*, Vol. IV., No. 7, July, 1909, p. 354.

†*American Medicine*, loc. cit.



MARYLAND LUNACY COMMISSION.

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MARYLAND PSYCHIATRIC SOCIETY.

THE fifth meeting of the Maryland Psychiatric Society was held at Bayview Asylum November 17, 1909, upon invitation of the Supervisors of City Charities. Luncheon was served at 2 P. M., following which an inspection of the insane department and of the hospital for tuberculosis patients was made.

About 3.30 P. M. the Maryland Psychiatric Society was called to order, Dr. Carswell presiding, 21 being present. Dr. Herring moved that the reading of the minutes be omitted, which was carried. A paper on "Some Lessons from Experience with the Indigent Insane" was read by Dr. C. B. Farrar, in which he quoted two cases as examples, both being lactational. These two patients had done well, but their families refused to assume the care of them, and they, having no place to go, were forced to remain in the hospital. He expressed the opinion that the after-care of the insane was more important in indigent cases than in those of the better class. Dr. Swartz corroborated the statement of Dr. Farrar regarding the neglect of patients by their families after discharge. In one case the friends of the patient had refused to allow her to live with them, because her husband was a bad character, and because she had been insane and would be pointed out as having so been by their neighbors. Dr. Bruns told of a case in which a man came to him and wished to have his wife declared insane. The woman had a strong maternal instinct. She had been possessed of some means, and had married a man considerably her inferior, by whom she had had one child, whom she was said to have "spoiled." She devoted much of her time to this child, and the husband naturally felt himself neglected.

Dr. Wade spoke of the work which has been done by the After-

Care Association of the American Medical Psychological Association in New York State, illustrating a case.

Dr. Herring moved that a committee be appointed to investigate the subject of after-care of the insane, and make suggestions regarding it, which motion was seconded by Dr. Bruns and carried. The Chair appointed Drs. J. Percy Wade, Clarence B. Farrar and Arthur P. Herring as a committee to have charge of the matter.

Dr. Dunton then made his report upon the committee from the Baltimore Bar Association, the same being annexed. He moved that the Maryland Psychiatric Society endorse the bill and do all in its power to further its passage, which motion was seconded and carried.

Dr. Herring proposed that the Maryland Psychiatric Society hold a joint meeting in the new faculty building with the State Lunacy Commission and the Neurological Section of the Medical and Chirurgical Faculty of Maryland, this meeting to be held December 9, in order to make a final effort to interest the members of the Legislature and the public in the passage of the State-Care Act. This was carried.

Dr. Dunton was re-elected secretary to serve for one year. He made a motion endorsing the State-Care Act, which, after being seconded by Dr. Bruns, was carried. Dr. Herring moved that the thanks of the society be tendered to the Supervisors of City Charities, Mr. Holliday and others concerned, for the entertainment provided for this meeting of the society, and also that the Supervisors of City Charities be commended for the excellent showing which they have made at Bayview Asylum in view of the lack of means at their disposal. He also called attention to the need of increased facilities.

REPORT OF COMMITTEE APPOINTED BY THE MARYLAND PSYCHIATRIC SOCIETY TO CONFER WITH COMMITTEE FROM BALTIMORE BAR ASSOCIATION.

A MEETING was held with the Baltimore Bar Association Committee at the office of W. L. Marbury on November 15, 1909, Drs. Spear and Dunton representing the Maryland Psychiatric Society, Dr. Hill being unable to attend.

It was learned that the bill had its inception in a conversation held by Dr. Geo. J. Preston and Mr. Reynolds seven or eight years ago. The latter had since been writing on the subject, and so was well prepared when about a year ago he was called upon by the Bar Association to draft a bill. The present bill represents a composite from three different States in which it is in successful operation. It differs slightly in form from that which was presented



at the Owings Mills meeting, and several phrases are added, somewhat broadening its scope. Copies of the changes are annexed, and in one of them brackets are used to show where matter has been added or omitted, and carets are used to show where a change has been made in phrasing.

At the meeting Dr. Spear first spoke for the society, stating that he felt, on account of the scandal having occurred in our profession, the Baltimore Bar Association, before drafting this bill, should have conferred with members of the medical profession, but it was pointed out to him that the bill did not apply solely to members of the medical profession, and that it would have been exceedingly cumbrous to attempt to confer with associations of all professions who will be affected by this bill.

The question was then asked if a judge has power to force the attendance of a physician at the rate fixed. This was declared to be not the case, and, in fact, the bill does not so state. The law applying to witnesses requires that a man acting as a ordinary witness may be compelled to attend, but as an expert witness he is not compelled to testify, unless he so desires.

The above point being disposed of, Drs. Spear and Dunton expressed themselves as being satisfied with the bill in its present form, and urge that the Maryland Psychiatric Society endorse it.

PHYSICIAN'S POCKET ACCOUNT BOOK. By J. J. Taylor, Philadelphia, the Medical Council. Bound in leather. Price \$1. 1910.

Taylor's Visiting List presents many new and novel features, combining both visiting list and ledger under one cover. Its use does away with the transfer of accounts to a ledger, thus obviating the unnecessary labor of posting. The status of any patient's account is ever before you, and a debtor can at a moment's notice be acquainted with his indebtedness. The entry of each visit and for what purpose can be recorded in the twinkling of an eye at the patient's bedside, thus preventing the chance oversight of a visit. As no signs are necessary the entry is in legal form and holds in court. Some 24 pages of good advice and a method of using the book are prefixed as an introductory. Among the many other useful features are: This is the only single book system on the market. Each account is kept on its own separate page, and is always posted and ready for striking a balance at a moment's notice. It can be introduced in court as evidence, for which the sign system is valueless. No loss accrues from neglect of entering just who has been treated and the charge. Every entry is original, and therefore meets all legal requirements in case of suit. No ledger is required. Its use may begin at any time of the year with no loss of space and is good until filled. These many features should commend the book to the favorable attention of the medical profession.

MARYLAND MEDICAL JOURNAL

NATHAN WINSLOW, M.D., *Editor.*

Associate Editors:

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RICHARD H. JOHNSTON, M.D.

JOSE L. HIRSH, M.D.
ALEXIUS MCGLANNAN, M.D.
A. SAMUELS, M.D.

BALTIMORE, JANUARY, 1910

WHAT IS TO BE THE FATE OF MARYLAND'S INDIGENT INSANE?

THE new Legislature is on the eve of convening for organization. What is to be its attitude toward remedying the present glaring defects in the care of the State's insane? Are the semi-civilized and barbarous methods now in vogue to survive, or is intelligent enlightenment about to assert itself by decreeing the banishment of the dark cell, the shackle and chain, the unhygienic quarters, the lack of employment, the solitary confinement? In other words, is a mandate to be issued that these unfortunates be handled as other dependent sick; namely, humanely, hygienically and rationally? How can one expect a mind-sick man to improve if he be subjected to improper treatment, or, worse, to such as would drive a healthy individual insane! Yet this has been the line of treatment of the insane in Maryland, and we have sat complacently by, never raising our voice to the true condition, and if we did, in such a low tone that it was drowned. Physicians have for a long time recognized that our insane have been and are being treated little better than beasts, and in some instances worse. They have complained about the barbarous and outrageous care bestowed upon the insane, but, alas, to no avail, because the politicians who could remedy the evil have other axes to grind; their patronage must sift to where the most returns can be accomplished; all moneys must be expended with this base idea in view; the insane cannot vote, therefore are of no earthly import or concern to Mr. Political Boss. All expenditure upon the mindless is, according to the professional politician, lost. Get the crazy out of the way, where they cannot be seen; let them survive as best they can; the sooner they die the better, losing sight that many are curable. Out of sight, out of mind, is their motto.

From time to time the JOURNAL has presented outlines of the magnificent work which the Maryland State Lunacy Commission

and its active, indefatigable and energetic secretary, Dr. A. P. Herring, have set out to accomplish on behalf of these degenerates. Through public lectures, addresses before both city and county medical societies, by the employment of the stereopticon, the laity and the medical fraternity have been aroused to the enormity of the cruelty attached to the handling of the insane in our almshouses. The whole fabric has been laid bare; conditions have been presented as they are. The truth has been told, but not exaggerated one iota. A magnificent work has been instituted; the semi-civilized treatment of our insane has been brought vividly and realistically to the attention of those who have ears. The question is, Are their efforts to bear fruit? The public is soon to hear the verdict. The gentlemen who have the fate and welfare of the mind-sick in the palms of their hands will in the near future render their decision. Let us hope that they will hearken to the call of the times; that they will, to their eternal glorification, decide that the antiquated methods now in vogue shall be forever banished. Their decision is a momentous one; the fate of a goodly number of our population depends upon it. The public will brook no halfway relief. The people want and demand better care of our insane. Citizens of every creed insist upon the treatment of these unfortunates as sick individuals. Let us hope that the legislators realize relief must be afforded. As in all other lines of endeavor, the past must give way to the present. In the treatment of insanity, as in that of contagious diseases, modern methods must and will prevail. The MARYLAND MEDICAL JOURNAL desires to place itself upon record as being unequivocally in favor of the immediate passage of a bill which will provide for State Care of the Insane.

EDITORIAL NOTE.

An esteemed reader of the JOURNAL has taken exception to the editorial, "The General Practitioner and Tumors of the Breast," appearing in the November issue. We are aware that a host of general practitioners are thoroughly alive to the dangers lurking in mammary tumors and of the necessity for their early removal, but from the cases under our personal observation and upon the authority of thoroughly competent specialists we based our statement that a large number of physicians fail to recognize the importance of early and complete extirpation of each and every tumor of the breast, whether benign or malignant.

The editorial was directed at no class of physicians in particular, but was designed to call attention to the number of inoperable cases coming to the hospitals.

Medical Items.

AT the recent meeting of the Dorchester Medical Society the following officers were elected for the coming year: President, Dr. Victor C. Carroll; vice-president, Dr. C. Frank Maguire; secretary, Dr. W. B. Houston; delegate, Dr. B. L. Smith; alternate, Dr. Eldridge Wolff. A paper that is to be presented at the meeting of the International Medical Society in Mexico on January 27, 1910, was read by Dr. B. F. Goldsborough.

THIRTEEN additional nurses were appointed to assist Misses Ellen La Motte and Grace Brumbaugh in their work among the tuberculous poor of Baltimore.

THE will of the late Dr. Thomas P. Sappington disposes of a large estate in Frederick and Carroll counties for the benefit of his widow, son and daughter.

DR. JAMES G. HANKS of Breezewood, Pa., suffered a broken collar bone and rib from the overturning of his automobile near Cumberland, Md.

DR. JAMES HENRY STAUFFER of Baltimore, who has been suffering with leukemia, was operated on at Johns Hopkins Hospital by Dr. J. M. T. Finney, and is reported to be much better. Blood was transfused into him from his brother, Mr. S. Theodore Stauffer, Jr., of Frederick.

OFFICERS of the Illinois State Board of Health have found that during the past year there have been over 175 cases of pellagra in the Illinois State Hospital at Peoria. They report that there have been 26 deaths from this malady. The monthly bulletin issued by the board for August is entirely devoted to a study of pellagra, and gives the result of the labors of this board in stamping out the disease, as well as their observations upon the origin and course of the disease. The bulletin is well illustrated by a number of photographs taken from cases in this institution.

FIFTY-SIX candidates took the examination given by the State Board of Medical Examiners in December, among whom were two colored men and one colored woman. There were no white women to take the examination.

DR. JAMES F. H. GORSUCH, Health Officer for Baltimore county, appeared before the County Commissioners and explained the sanitary conditions in Arlington. He urged a much-needed reform—a sewer system—and suggested means whereby the present conditions might be much improved.

PLANS are being made for enlarging the Home for Incurables, Baltimore, by erecting a wing on an adjoining lot. The institution is said to be entirely free from debt.

A JOINT public meeting was held by the Maryland Lunacy Commission, the Neurological Section of the Medical and Chirurgical Faculty and the Maryland Psychiatric Society in the interest of State care of the insane, which, from all present indications, will be authorized by the Legislature in January.

THE members of the House of Delegates of the Medical and Chirurgical Faculty have approved two bills to be presented before the coming Legislature, one being a pure food and drug law and the other a law to provide for the licensing and regulation of midwives.

DR. WILLIAM J. CHEWNING of Fredericksburg, Va., is seriously ill at his home.

THE engagement is announced of Miss Sophie Chapman Robinson of Fredericksburg, Va., to William Edward Croxton, M.D., Medical College of Virginia, '04, of Wakema, Va.

DEATHS.

THOMAS PEARRE SAPPINGTON, M.D., University of Maryland, '69, at his home in Libertytown, Md., December 8, of Bright's disease, aged 63 years.

H. M. DAVISON, M.D., at his home in York, Pa., aged 38 years.

FREDERICK BOSTOCK WEBB, M.D., University College of Medicine, '01, of Roanoke, Va., at Baltimore, December 4, aged 45 years.

MARRIAGES.

HENRY ALAN NAYLOR, M.D., University of Maryland, 1900, to Miss Louise Requardt, both of Pikesville, Md., December 3.

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Book Reviews.

MODERN CLINICAL MEDICINE SERIES—DISEASES OF CHILDREN.

Edited by Abraham Jacobi. An authorized translation from "Die Deutsche Klinik," under the general editorial supervision of Julius L. Salinger. New York: D. Appleton & Co. 1909. Cloth.

Although supplied with a number of American text-books of undoubted merit, and no apparent need at present for any additional, this volume has many features which should commend it to the American medical profession. Under one cover we have at first hand the opinions of a number of German pediatricists of international reputation upon the various aspects of their specialty. The volume consists of a number of chapters or monographs by the master minds of Germany so interwoven that unless aware of the fact, you would judge that the work was that of an individual. Only affections which differ from the adult type receive attention. Amongst the contributors are such celebrated authorities as C. Keller, Berlin, "Diseases of the New-Born in the First Days of Life;" Ad. Czerny, Breslau, "The Feeding of Children;" H. Neumann, Berlin, "Infantile Scurvy" (Barlow's Disease), H. Finkelstein, Berlin, "Hereditary Syphilis;" A. Hoffa, Wuerzburg, "Infantile Spinal and Cerebral Paralyzes;" A. Baginsky, Berlin, "Diphtheria and Diphtheritic Croup;" O. Huebner, Berlin, "Scarlet Fever;" O. Huebner, "Measles, Morbilli, Rubeola;" H. Gutzmann, Berlin, "Speech Disturbances of Childhood." Among other subjects treated are "The Most Common Infections of the Oral Mucous Membrane in Children," "Acute Digestive Disturbances of Infancy," "Chronic Digestive Disturbances of Infancy," "Rickets," "Infantile Scrofulosis and Tuberculosis," and so forth. The book is well illustrated and deserving a place in the library of the American physician.

A PRACTICAL TREATISE ON OPHTHALMOLOGY. L. Webster Fox, M. D., LL. D., Professor of Ophthalmology in the Medico-Chirurgical College, etc. New York: D. Appleton & Co. Cloth. 1909. \$6 net.

Appleton, as usual, has produced a contribution which is to become a classic in its particular field of medicine. It is an invaluable work, written clearly, concisely and conservatively. The arrangement of the subject matter is logical, the cuts are numerous and well adapted to the text and excellently executed. Every page bears witness of the master mind of the teacher, clinical experience. The wealth of clinical experience contained therein adds materially to its attractiveness. Owing to its practicalness and the simplicity of the treatment of the various affections, general practitioners, as well as students, will find in it an invaluable aid in their work. It is also well suited to the oculist, who will find in its pages much of benefit. It is bound to attain and maintain a

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high place in ophthalmic literature. Although in a book of this character all aspects of ophthalmology could not be entered into thoroughly, still every subject receives sufficient attention to enable one who desires to pursue advance studies to get a working basis. The bacteriology of the eye is the recipient of especial attention, and the relationship between constitutional disorders and affections of the eye is thoroughly discussed. The operations upon the eye and its adnexa are selected according to their practicability and is an especially attractive feature of the production. Much helpful information as regards the modern treatment of eye affections is included. Color blindness and the theories concerning same are presented in full. The book is well bound, the typographic workmanship excellent, the print clear and bold, the language simple, concise and well chosen, the illustrations numerous, well executed, and some colored; it is modern and up to date, and, above all, practical. These and its many other features should commend themselves to the prospective purchaser.

BIOGRAPHIC CLINICS. Volume VI. By George M. Gould, M.D.
Philadelphia: P. Blakiston's Son & Co. \$1 net. 1909.

Poor old Prophet Elijah! Sitting out there in the desert under that juniper tree; one of the most pathetic objects in history!

"This is the last appeal I shall write. I have given all the strength and money I can spare to my gospel. My reward has been the hatred and persecution of my colleagues, tempered only by the fact that I did not want the things they denied me—office, power, fame, money. The trunks of existing medical colleges are dead, being rooted in neither genuine science, life nor love. Fashionable capitalists and their money are held in tight leash by fashionable doctors. Yet truth will find the way some day."

All of which means that one lone reformer cannot by himself uproot and destroy permanently a widespread evil of long standing. It takes Elisha, Jehu and Hazael to finish the business for good and all.

It nearly always turns out the same way. An earnest worker hits upon a great truth, which, it seems, every thinking man ought to recognize and act upon at once. As they doubt and delay, he becomes more insistent. They resent his urgency; he questions their honesty. He returns more intently to his truth, and it looms larger and larger, until it seems to be about the only truth in the world. He is voted a nuisance, and is not even accorded a hearing. There is nothing left but the desert and the juniper tree.

Dr. Gould has an honored name among American physicians. He has stood manifestly for a great truth, before little appreciated; the profound influence of eyestrain upon the whole nervous system of the body; its power to cause obscure and life-wrecking disturbances of distant organs—the unsuspected fact that even skilled oculists and opticians often fail to find and correct the strain.

The writer, a mere general practitioner, long ago heeded the warning of Dr. Gould, and has for many years looked for eye-

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Obviate biliary infection and stagnation
Reduce swelling and spasm of the gall-ducts
Modify calculi and favor their expulsion.

Arhovin Capsules

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Lessen gonorrheal difficulties (tenesmus)
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TO DO THE DIGESTING
FOR THE STOMACH,
WE SHOULD PROPERLY
FEED THE DIGESTIVE
CELLS in order
that THEY MAY DO
their OWN WORK.

SEE THAT YOUR
PRESCRIPTION
READS

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THAN HIS STOMACH.

The NUCLEO-ENZYMES
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and as found in
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MAKES IT
DIFFERENT
from ALL other
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strain in all obstinate diseases of uncertain origin, even after good men have declared the eyes normal or visual defects corrected. The distinguished oculist, rushed by a fashionable practice, is perhaps most likely to err in such cases.

Dr. Gould has, in the present volume, put on permanent record his views as to the unsuspected lines (migraine, Meniere's disease, melancholia, etc.) in which eyestrain may be present, and the valuable clinical experiences on which he has based these views. The book is therefore desirable for the library of physicians, special and general. The excesses of the author, if any, will be forgiven by all readers.

The prophet under the juniper tree needs not an end to his career, but rest, food, a little encouragement and a change of attention to some other subject. We shall be glad to take the part of that angel of old and help in refreshing a strong, aggressive champion of the truth amid his discouragements.

ANNALS OF SURGERY, December, 1909, issue, Vol. L, No. 6.

It gives us great pleasure to commend the endeavors of our fellow-journalists, the J. B. Lippincott Company, for the magnificent number of the Annals of Surgery issued to celebrate the completion of the fiftieth volume. The number is, indeed, a credit to any publication. The subscribers are treated to 23 well illustrated original articles by eminent specialists, both American and foreign. Those interested in the scientific surgery of the day will find here the latest word on "Intrahuman Bone Grafting and Reimplantation of Bone," by Sir William Macewen of Glasgow; "Notes on Derangement of the Knee," by Robert Jones of Liverpool; "Partial Hypophysectomy for Acromegaly," by Harvey Cushing of Baltimore; "Ligation of the Thyroid Vessels in Certain Cases of Hyperthyroidism," by Charles H. Mayo of Rochester; "Treatment of Dry Arthritis with Injection of Vaseline," by Thorkild Rosing of Copenhagen; "The Operative Treatment of Fractures," by W. Arbuthnot Lane of London; "Musculospiral Paralysis Complicating Fracture of the Humerus," by Charles L. Scudder and Walter E. Paul of Boston; "Cancer of the Prostate," by Hugh H. Young of Baltimore; "Pancreato-Enterostomy and Pancreatectomy," by Robert C. Coffey of Portland; "A Disease of the Gall-Bladder Requiring Cholecystectomy," by B. G. A. Moynihan of Leeds, and other subjects of equal current interest by eminent writers and investigators. Any journal should indeed feel proud of such an unusual collection of articles by such leaders in surgical thought. It is no exaggeration to proclaim this the most meritorious medical journalistic production in the English language.

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Excerpts.

TUBERCULOSIS OF THE BREAST.

WM. L. RODMAN, M.D., LL.D.

It was not until 1881 that Dubar made a careful, systematic and scientific classification of the disease. He was the first to demonstrate the tubercle bacillus in connection with the breast.

Though undoubtedly rare, tuberculosis of the mammary gland is more common than it has been previously thought to be. In 1500 cases of mammary disease admitted to St. Bartholomew's Hospital, London, there were 1.5 per cent. due to tuberculosis.

Tuberculosis of the breast may be primary or secondary. When primary, infection may either take place through the blood or directly from without. When occurring in the latter way, infection may take place either through an open wound or through the galactopherous ducts. Inasmuch as the lesions are more pronounced in the alveoli than in the ducts, and furthermore, as the ducts themselves are not more diseased at their exit at the nipple than in the substance of the gland, it is questionable whether infection through the duct is common.

Secondary tuberculosis of the breast may result from the extension of the disease from the ribs or pleura, or be carried by the lymphatics from diseased axillary or other neighboring lymphatic glands, or through the blood current from a focus even remotely situated.

It has been fairly well established that the disease begins within the acini rather than in the connective tissue of the breast.

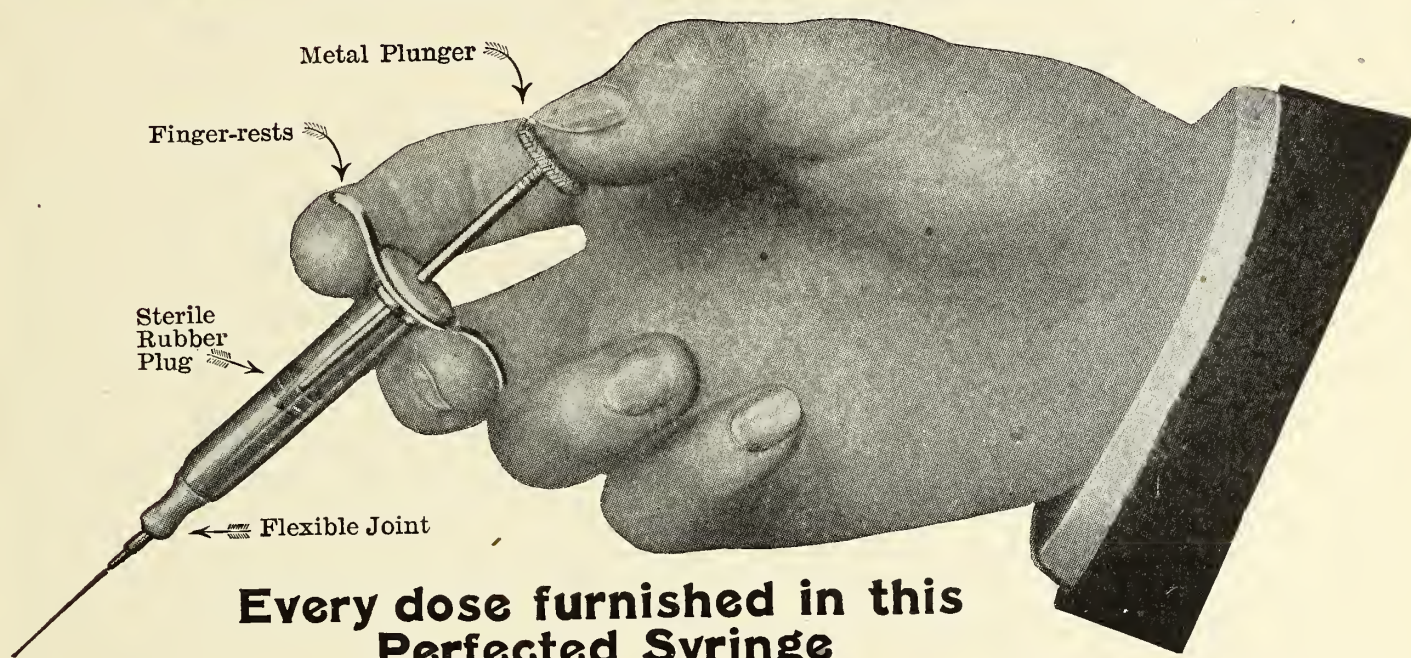
Mammary tuberculosis is far more often encountered in young females than in males, and is particularly obnoxious to young women. Heredity exerts little, if any, influence. Trauma and inflammatory affections, by lowering the vitality of the breast, predispose it to subsequent tuberculosis. Tuberculosis in other parts of the body markedly predispose one to secondary involvement of the breast.

There are both discrete and confluent varieties. In the former there are isolated tubercles separated by healthy tissue. These tubercles may undergo changes, either remaining isolated, or by their coalescence forming larger masses, this constituting the confluent form of the disease. The isolated tubercles vary widely in size, some being smaller than a pea, others as large as a hazlenut. When caseation and liquefaction occur, abscesses result.

In the confluent variety a swelling of considerable proportions results. It is, however, not sharply limited, being ill-defined and irregular, with bosselations here and there. If cut into during the early stages, it is white or grayish in color and rather firm in consistency. Later on, however, the center will have become yellow in color, although the periphery may still retain the original appearance. When liquefaction occurs, the so-called abscess of Roux results.

Cases of tuberculosis of the breast coincident with carcinoma

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**Every dose furnished in this
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ADVANTAGES OF NEW SYRINGE: ASEPSIS, contamination impossible.

POSITIVE WORKING: The metal plunger screws into the rubber plug, adjusting pressure and making action positive.

Metal finger-rest with rubber guard at top of syringe prevents any possibility of syringe breaking or injuring operator's hand.

Needle attached with flexible rubber joint permits motion of patient without danger of tearing the skin—a great advantage in administering to children.

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Simplicity and accuracy—no parts to get out of order.

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have been recorded. In one of four cases reported the symptoms of tuberculosis predominated and the macroscopic appearance was that of tuberculosis rather than carcinoma. Microscopic examination demonstrated carcinoma as well. Of two such cases reported by A. S. Warthan of Ann Arbor, Mich., tuberculosis was primary in one and carcinoma undoubtedly the primary lesion in the other.

The onset of the disease is insidious, except when it occurs during lactation, when it is of more rapid growth. It may last for years. Only one breast is affected, there being no case, so far as I know, where both organs were involved.

In the discrete variety indurated areas may be detected here and there throughout the substance of the gland, but separated apparently from the surrounding tissue. In other cases the outline is indefinite.

The skin is not adherent until late in the disease. When it is, fistulæ soon form. Pain is a rare symptom early in the disease, and when present does not exist to a pronounced extent. It may be severe as a late symptom.

The confluent form pursues a more rapid course, fistulæ forming early in its evolution. A mass varying in size from a hazlenut to an orange, of irregular outline, hard or soft, is found usually in the upper and outer quadrant. The axillary glands are early involved, rapidly increase in size, and may suppurate. It is to be noted that the glands do not fuse and become matted together as in carcinoma. This is of importance as a differential sign.

In primary tuberculosis the prognosis is excellent. In the secondary form it will depend, of course, upon the nature and extent of the primary lesion. Of 16 patients reported by Brändle of the Tubinger clinic, 15 were cured by operation and were shown to be well 1 to 19 years afterwards. Three of these patients succumbed to phthisis subsequently. There was, however, no local recurrence.

Tuberculosis of the breast should be treated by excision of a wedge-shaped portion of the gland, curetting and cauterizing the sinuses, or by amputation of the breast, owing to the extent and variety of the disease. Where the process seems to be discrete and localized in a definite portion of the breast, partial resection of the gland is a warrantable procedure. Where a large part of the breast is involved, however, nothing short of amputation is to be considered. If sinuses are not too numerous, they may be curetted and cauterized. In one of my cases, a girl of 22, an excellent result followed plastic resection of a part of the breast. I consider it necessary that the axilla should be explored in all cases, and if enlarged glands are found they should be removed.

In cases which refuse operation, or in others possibly as an adjunct to it, Wright's bacterial vaccines should be used.

Bier's treatment may also be given a fair trial. There is no reason why a combination of Wright's and Bier's treatments may not be employed.



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VALUE OF THE PROCTOSCOPE.

J. Dawson Reeder, M.D.,

Baltimore

Instructor in Proctology, University of Maryland; Assistant Proctologist, Hebrew Hospital Dispensary.

IN presenting this paper it is not my intention to endeavor to present anything new to the proctologist, but to call attention to the general physician and surgeon the value of a thorough examination in every history taken, either in hospital practice or the home. I do not believe the day far distant when the above suggestion will occupy a space upon our history chart and will be considered just as important as a physical examination today includes the chest, abdomen, genito-urinary and reflexes. Many obscure symptoms given by our patients may be readily cleared up by such examination, and unsuspected conditions found which may lead to an entirely different diagnosis. For many years we were taught that mucous colitis and its allied conditions were purely of a neurotic origin, which caused a hypersecretion or increased activity of the goblet cells. This has been shown by Tuttle and others to be erroneous, inasmuch that the condition producing the neurosis was responsible also for the mechanical changes produced in walls of the gut itself. That it may be due either to pressure upon the parts from a growth in other organs, or may be due to chronic catarrhal appendicitis, and most frequently to acute angulations above or within the sigmoid, which are produced by inflammatory adhesions. Ulcerations and growths, both malignant and benign, may readily be recognized in the lower 10 or 12 inches of the gut, and proper treatment instituted without delay.

Proctitis and Sigmoiditis.—The structure of the mucous membrane and the functions of the rectum and sigmoid render these organs peculiarly susceptible to catarrhal affections. Not only are they studded with myriads of Lieberkühn follicles, forming little crypts for the lodgment of infectious materials, but they are vulnerable points by virtue of the fact that excrementitious matter of the alimentary canal lodge for varying periods before being passed

out of the body. Here these masses, by pressure or friction, sometimes actually wound the mucous membrane and produce lesions that become infected and result in catarrhal proctitis. The intimate connection and similarity of structure between the rectum, sigmoid and colon render it impossible to discuss the disease in one part without taking into the consideration the others, and as the chief symptoms of catarrhal inflammation of sigmoid and colon are often referred to the rectum or associated with symptoms in this organ, it has become the province of the rectal specialist to look into and treat these diseases whether they are confined to the rectal ampulla or extend to the caput coli. Inflammations of mucous membrane which are not due to any specific germ yet recognized are among the most frequent diseases, especially in large cities, and climates where individuals are subject to frequent and excessive changes in temperature, poor ventilation and lack of physical outdoor exercise.

Acute proctitis is easily diagnosticated by the proctologist, but is frequently overlooked by the general practitioner, for the reason that the latter usually confines his examination to the lower rectum in search of piles, fissures and fistulas.

Of the inflammatory conditions seen through the proctoscope may be mentioned acute catarrhal, atrophic catarrhal, hypertrophic catarrhal, follicular and ulcerative proctitis, all of which have their characteristic appearance more or less well defined. Ulcerations should at once gain our undivided attention, as they are generally specific, tubercular or dysenteric in origin, and the proper diagnosis will materially assist in the rapidity of your patient's recovery, if such can be obtained. In the "Rectal Clinics" of Tuttle and Gant of New York one is at once impressed with the number of malignant growths which present themselves to the proctologist, inoperable in many cases, due to the fact that they had not been recognized previously.

Primary Tuberculosis of the lower portion of the intestinal tract is exceedingly rare. There are a few instances where the disease has been found in recta of children, but in adults it is almost unknown. As secondary to the disease in other organs, however, it is comparatively frequent—infection of the intestinal walls occurs through the invasion of the lymphoid or solitary follicles. These may enter the canal by ingestion of food, and there is no reason why they may not pass down and infect the sigmoid and rectum. The ulcerations produced have round or elliptical shape, with a necrotic degeneration of the borders, or coalesce with one another until they form large, irregular patches. If this condition follows around the wall of the gut and thus follows the blood vessels and lymphatics, the process may be arrested, the parts cicatrize and true stricture result.

Malignant Growths.—Vital statistics show an alarming increase in the prevalence of carcinoma throughout the world. Tuttle states that in the city of New York, in 1890, the death rate was 1 to 1679

in population; in 1900 it had increased to 1 in 1394 (compiled for Dr. Tuttle by Dr. R. S. Tracy). Parke (*The Practitioner*, 1899), in discussing this rapid increase in malignant disease in the State of New York, says: "If for the next ten years the relative death rates are maintained, we shall find that ten years from now—1909—there will be more deaths in New York State from cancer than from consumption, smallpox and typhoid fever combined." In recent years a number of cancers have been seen in comparatively young people, and among these heredity seems to be somewhat clearly established. The decreasing frequency of the disease after 60 years of age may be due to the comparatively small number of people living at that age.

According to statistics from Table xvii of "Gant's Records" (Diseases of Rectum and Anus, p. 504; third edition), we find the following:

Cancer of rectum.....	80	per cent.
Cancer of colon.....	11.5	per cent.
Cancer of cecum (valves and appendix).....	4.1	per cent.
Cancer of small intestine.....	4.3	per cent.

From statistics of others reviewed and analyzed by Gant, together with his personal experience, he has found that 4 per cent. of all cancers and approximately 80 per cent. of all intestinal cancers are located in the rectum.

Mr. Allingham of St. Mark's Hospital, London, found 105 cases of cancer out of 4000 cases of rectal diseases, or 2.6 per cent. This percentage, according to Gant, is too low. From personal observations and inquiry, I do not think too much stress can be made of the importance of thoroughly going into the history of each case presented, with history of hemorrhage from the bowel, with loss of weight and temperature associated with alternate attacks of diarrhea and constipation.

Morning diarrhea, or a call to stool, immediately upon rising in the morning, associated with passage of mucus, blood or pus, is always a symptom of localized disease which demands the most careful digital and instrumental examination. The proctoscope to-day affords us an unfailing means of diagnosis, in consequence of which we are no longer dependent upon the subjective symptoms of our patient to determine his ailment. This examination may be made as easily at the patient's bedside as in the office or hospital, with very little discomfort and no after-suffering incident to the introduction of the instrument. Can we estimate the value of the proctoscope in cases presented to us with symptoms and history which has caused the physician in attendance to be almost positive of malignancy, and after such examination we are able to eliminate malignancy by finding a proctitis or sigmoiditis due to acute angulations or adhesions, which offer a most favorable prognosis by proper treatment? Is not the patient's mental condition, as well as the doctor's ability to offer a favorable prognosis, worth this examination?

During the past twelve months it has been my good fortune to see a number of cases with the history of bleeding from rectum as their chief ailment. Had not the proctoscope been used the condition present would have been one of guesswork and the results, perhaps, would not have been so gratifying. In those cases in which I could not make a diagnosis, I outlined treatment from subjective symptoms. Reports from some of them have been most pleasing, inasmuch that the patient had improved markedly:

CASE I.—Date, February 15, 1909. Mr. F. O. B.; age, 38 years; male, white; referred by Dr. Edmunds.

History—Pain in loins; mucus discharge from rectum and excoriations on buttocks from moisture around anus.

Family History—Negative.

Pain—Intermittent in character, accompanied by depression.

Discharge—Muco-purulent; some months ago passed a complete cast several inches in length.

Chest—Negative.

Abdomen—Negative.

Anus—Several hypertrophied anal papillae; moisture troublesome.

Rectum; Sigmoid—Proctoscopic examination reveals marked proctitis, with areas of mucous deposits about size of a dime, extending through lower sigmoid. Colon very tender on pressure and seems distended.

Treatment—Ichthyol and glycerine, 10 per cent.; knee chest posture. Local applications of Ext. krameria through proctoscope with pneumatic distension. Patient ordered to report at office every three weeks for examination.

October 10, 1909.—Patient has apparently completely recovered; no distress in either bowel or anus. Advised to report at end of two months for examination.

Diagnosis—Mucous colitis.

CASE II.—Mrs. E. B.; age, about 32; female, white; referred by Dr. Messick.

History—Profuse hemorrhages from rectum after bowel movements; examination to eliminate ulcer (probable diagnosis). Patient had been operated on several times for pelvic trouble and adhesions.

Pain—Almost constant distress in lower abdomen.

Discharge—Bright red blood.

Chest—Negative.

Abdomen—Tender on pressure; some distension from gas.

Anus—Normal in appearance.

Rectum; Sigmoid—Proctoscopic examination shows dry, glistening mucous membrane, with small areas of dark appearance at uniform intervals; no ulceration found, and after 6 to 7 inches proctoscope enters normal gut; lower 6 or 7 inches looks ready to bleed on least peristaltic movement.

Treatment—Ichthol 10 per cent., by rectal syringe, to be re-

tained just as long as possible in knee chest position: hygienic and dietary to be worked out by Dr. Messick.

Result—Hemorrhages ceased in first week, and last report (three months later) has had no recurrence.

CASE III.—Oscar; age 17 years; male; white.

Referred—Ward case, University Hospital, medical service.

History—Bleeding at intervals of several days for past four or five years; no pain, but some prostration after hemorrhages.

Pain—Negative.

Discharge—Slight amount of mucus between attacks of bleeding.

Chest—Negative (when first seen).

Abdomen—Negative.

Anus—Normal.

Rectum; Sigmoid—Proctoscope examination shows ulcerations about size of split bean, with whitish necrotic edges, extending as far as possible to be seen with 10-inch tube. Dr. Gordon Wilson was requested to go over chest, which had been reported negative, and found a foci in apex of right lung.

Treatment—General tonic, fresh air and aq. ext. krameria through rectal tube, alternating with ichthyol and glycerine.

Diagnosis—Tubercular ulcerations of intestinal tract, secondary to pulmonary infection.

Result—Bleeding less frequent and markedly decreased in amount; slight improvement when last seen.

CASE IV.—Date, October 9, 1909. Miss M. P.; age 23 years; female; single; referred by Dr. Bowen, Mt. Washington, Md.

History—Bleeding from rectum; pain in left side of abdomen.

Family History—Father died of Bright's disease; mother living and healthy. Past history, negative.

Pain—In left side of abdomen; sometimes in chest.

Discharge—Mucopurulent at times; bleeding occurs between bowel movement.

Abdomen—Negative.

Chest—Moist râles in apex of left lung.

Anus—Negative.

Rectum; Sigmoid—Proctoscopic examination reveals several well-defined ulcers in upper part of rectum and sigmoid, which have ragged necrotic borders; ulcerations seem to be sweating out a bloody serum at examination, and look tubercular.

Treatment—Patient ordered to return in a week for local treatment of krameria solution, and Dr. Bowen advised to treat general condition.

Diagnosis—Tubercular proctitis and sigmoiditis.

Result—When last heard from patient was greatly improved as to general health, and had no recurrence of bleeding.

CASE V.—Date, October 29, 1909. S. K.; age 39 years; female; single; referred by Dr. H. D. McCarty.

History—Profuse hemorrhage at each stool; condition present for three or four years. (Patient's statement.)

Family History—Negative.

Symptoms—Profound anemia; prostration; mucous membranes absolutely white, and hemoglobin very low; hemic murmur in each valve.

Pain—Over area of sacrum and lumbar region.

Discharge—Bright red blood, profuse at defecation; mucopurulent discharge at intervals.

Abdomen—Negative.

Chest—Negative.

Anus—Several anal papillae hypertrophied.

Rectum; Sigmoid—Under proctoscopic examination with 10-inch tube gut is absolutely white and dry (anemic), resembling the conjunctiva, which is bloodless in appearance, with areas of mucus and small indentations about size of pea, which have punched-out appearance; no signs of ulceration or bleeding area.

Treatment—Patient returned to Dr. McCarty for general tonic treatment, with advice to have gynecologist see her for possible malignancy or fibroids.

Diagnosis—Not made.

Result—November, 1909, Dr. McCarty reports that there has been marked improvement in general health as result of tonic and hygienic treatment; bleeding ceased and anemia rapidly improving.

CASE VI.—December 1, 1909. M. H. S.; age 24 years; male; single; referred by Dr. Sill.

History—Nausea; diarrhea; for past three months unable to retain breakfast over one-half hour.

Family History—Negative.

Symptoms—Pain in left iliac fossa, crampy in character, feeling as though intestine was tied down.

Pain—At times over entire abdomen.

Discharge—Mucopurulent, constantly soiling clothes.

Abdomen—Slightly distended; pain on deep pressure general.

Chest—Negative.

Anus—Normal.

Rectum; Sigmoid—Proctoscopic examination shows red congested membrane, covered with glary mucus of a grayish color; very offensive. Entire area has elevations about size of pea, which are very red and present a white summit of necrotic tissue.

Treatment—Enema of salt solution night and morning in knee chest position, followed by injection of 25 per cent. solution ichthylol at bedtime; patient reports at office three times a week for irrigation with 10 per cent. aq. fld. ext. krameria.

Diagnosis—Follicular proctitis.

Result—At last visit, January 3, 1910, nausea ceased; has vomited only once in three weeks; diarrhea less, but present at intervals of several days; pain in abdomen completely relieved; has gained five pounds in weight.

The above cases only serve to demonstrate that the future of the proctoscope cannot be estimated as an aid to diagnosis, and while I must admit my inability to make a diagnosis in a number of cases examined, it certainly has been of great value to be able to eliminate certain possibilities.

TWO CASES OF ACUTE ALCOHOLIC POISONING IN CHILDREN.

By Dr. Edward Anderson
Rockville, Md.

THERE seems to be a great dearth of journalistic literature on the subject of acute alcoholic poisoning, though, judging from my experience, I should think such cases were not very rare, at least in adults, but I have seen only two such cases in children.

November 10, 1901, at noon, I was called to a case of alcoholic coma in a child six years of age. His father was in the habit of bringing whisky home every Saturday night and called his friends in to carouse all Sunday. On this particular Sunday morning, at 7 o'clock, while in bed, he called to his son to bring him the bottle of whisky and told him to drink some also, which he did; how much, I do not know, but it was supposed to be about a gill. When I reached the house I found the child unconscious and perfectly limp. I tried every means to vomit him, but all my efforts were unavailing. I then washed his stomach out through a nasal tube, but that did no good, as there was then no alcohol in it, all having been absorbed. I don't remember what else was done, except to put him to bed and cover him up. He laid in an almost lifeless condition until 5 in the evening, when he went into convulsions and died.

October 30, 1909, at 10 in the morning, I was called in to see a child of six and found him in convulsions, with clenched teeth and eyes insensible to light. The father of this child was a drinking man and had given his son whisky at 7 in the morning to relieve cramps in his legs. I forced his teeth apart with a spoon handle, placed 10 grains of calomel on his tongue and poured about 40 grains of bromide of potassium in solution down his throat by means of a large spoon placed between his teeth. I then had him put to bed and surrounded with bottles of hot water, and sweated him until 1 o'clock in the afternoon, when he awoke perfectly well and entirely ignorant of what had happened, his bowels having moved freely in the meantime. Had this child been allowed to remain as he was when I first visited him I do not believe he would have lived two hours. The whisky was given to both of these children on an empty stomach. Had their stomachs been full, they would probably have vomited the whisky, and if such had not been the case it would have been absorbed much more slowly. It is useless to wash out the stomach in cases like these unless it is done immediately after the whiskey has been swallowed. Alcohol, like uremic and puerperal, convulsions are no doubt best combated by purging and sweating the patient.

STAHL, HOFFMAN, BOERHAAVE, HALLER, CULLEN AND BROWN.

(1660-1788.)

ELEVENTH OF A SERIES OF ESSAYS ON THE HISTORY OF
MEDICINE FROM THE EARLIEST TIMES.

By H. M. Cohen, M. D.

CHAPTER XI.

THOSE of us who are inclined to trace medicine back to the Second Book of Genesis, when "the Lord God formed man of the dust of the ground, and breathed into his nostrils the breath of life, and man became a living soul," have ever struggled to obtain a reasonably clear comprehension of that apparently mystical term, the *soul*. What is it? Where does it reside? What is its function? These questions philosophers from the time of Aristotle have been asking themselves; and, like the solution of perpetual motion, they still remain unsolved.

The literature of the seventeenth and eighteenth centuries abound in discussions of this subject and medical men in vain sought to explain this unknown mystery of the human body.

The Psyche of Aristotle and the Pneuma of Plato were followed by the equally vague Arcanum of Paracelsus and the Archaeus of Von Helmont.

The subject was finally grappled with by Stahl, and this famous, though somewhat morose, physician added an important chapter to medical psychology; but the great mystery of life was yet unsolved, notwithstanding the new investigations of the "Sour Metaphysician."

George Ernest Stahl was born in 1660 at Anspach. He received his degree at Jena, and was later appointed court physician at Weimar. In 1694 he became professor of medicine at Halle, where for twenty-two years he continued to teach.

Stahl's theory of life centered itself about the soul and spirit, but his deep study and investigation brought him no closer to a solution of the puzzle of the ages than were his predecessors, Aristotle and Plato, centuries before him. His only colleague was Hoffman, a much more popular and distinguished man than himself.

Frederick Hoffman was born at Halle in 1660, and, like his great rival, Stahl, received his degree at Jena and later became professor at the University of Halle. The two teachers held opposite views on the mystery of life. Stahl taught that the first process of development was the soul. This caused the life, which was later converted into living action, and finally into living organism. Hoffman took the contrary view and began with the living organism, the theory of the mechanical philosophers.

Following Stahl and Hoffman came Boerhaave, one of the most successful physicians from a monetary standpoint in the history of medicine, for it is recorded that he accumulated a fortune of a million dollars as a result of his practice. He was born in 1668 near Leyden. His father was a clergyman, and it had been intended that he should also take up the cloth. While at school he was looked on as a sort of prodigy; but he decided to give up his ecclesiastical studies for medicine, and soon acquired a world-wide reputation. It is said that his name was so well known that a letter addressed to "Dr. Boerhaave, Europe," would reach him safely, and in his office one found mandarins from far-off China as well as nobles from his own city.

Among his most distinguished patients were the Grand Duke of Tuscany, William III and Peter the Great. It is related that the latter spent the night on a barge near Boerhaave's house so that he could see the eminent physician for two hours before lecture time on the next morning. He was, no doubt, the most famous physician of his age, but left little of value to permanent medicine. He, like Hoffman, "looked on health and disease as the outcome of chemical and physical conditions acting on tissues endowed with vital properties." (Leech). He died in 1738 at the age of seventy.

The most famous pupil of Boerhaave was Albert Haller, later known as the "Father of Physiology." Like his distinguished master, Haller had a most remarkable career. In early youth he displayed a precocity that astounded his friends. He was born at Berne on the 16th of October, 1708, and at the age of four expounded the Scriptures to his father's household. When eight, he had already composed 2000 notices of famous characters. At the early age of ten he is said to have prepared a vocabulary of Greek, Hebrew and Chaldee, and at fifteen composed a tragic poem of something like 4000 verses.

When eighteen years of age he received his diploma at Leyden, where he had formed a great fondness for his teacher, Boerhaave, then in the heyday of his career. After an extended journey over Europe, he was selected by George II to occupy the chair of medicine, botany and anatomy at the new University of Göttingen. His indefatigable energy displayed itself in an extraordinary output of light reviews and essays, reaching, it is said, the almost fabulous number of 12,000. To the medical world he is known principally for his contributions to physiology, his treatise on irritability marking an epoch in that branch.

Two other physicians of this period require mention—William Cullen and John Brown, both of Scotland. Cullen was born in 1710 and was instrumental in organizing the medical department at the University of Glasgow. He succeeded Boerhaave in popular esteem, and his great learning was generally recognized over all Europe. His principal work was the celebrated "Cullen's *Materia Medica*."

His keenest rival proved to be his one-time secretary, John Brown, who in many respects resembled Paracelsus. His teachings were directly opposed to those of Cullen, and finally had the effect of causing a riot at the University of Gottingen. The "Brunonians," consisting of about four hundred members of the famous university, were led by a young and over-ardent professor against the rival faction, with the result that a conflict ensued, causing many broken heads. The police of the town proved powerless to bring about peace, so the troops were called upon to quiet the warring enthusiasts. This so enraged the student-body that something like 1500 of them left the institution's buildings and refused to return until the soldiers had been withdrawn from the town.

Brown was born of humble parents, and at an early age was left fatherless. Upon the death of his parent, to quiet his weeping, he was told that his father "had gone to heaven." The next morning, the child being missed from his home, was found on the north bank of the Tweed, mournfully looking over toward England. When questioned as to why he had gone to the river, he replied that he desired to go to England, because he had been told "that was heaven," and he thought he would there be able to find his father.

His career as a young man was brilliant, but unprofitable. As a result of his reputation for learning and wit he obtained the tutorship to the family of a Berwickshire laird. His lifelong weakness for stimulants manifested itself at an early date, and one evening, when the laird was entertaining at dinner a company of neighboring lairds, young Brown, having evidently been overindulging, was given the hint to retire to his quarters. After dinner the guests entered into a discussion over the theological question of the decrees of Providence. The argument was quite heated, and it became more and more difficult to arrive at a conclusion. Brown had the reputation of more than ordinary wisdom, and it was finally decided to permit him to settle the matter. Accordingly a servant was sent upstairs, with the master's compliments, to learn what Brown thought of the decrees of Providence. The reply came quickly: "Tell the laird, I think the decrees of Providence very absurd, that make so many blockheads lairds." This brilliant piece of repartee cost the young tutor his position.

Brown created a new school of medical teaching which was based principally on the theory of *excitability*. Diseases were caused by *direct* and *indirect debility*, and were either esthenic or asthenic. All treatment should be directed to overcome these conditions by debilitating or stimulating medicines. The school hardly survived its founder, although during his life he had many followers. The following is a copy of a prescription furnished by him to a hypochondriac patient: "For breakfast, toast and rich soup made on a slow fire; a walk before breakfast, and a good deal after it; a glass of wine in the forenoon, from time to time; good broth or soup to dinner, with meat of any kind he likes, but always the most nourishing; several glasses of port or punch, to be taken after dinner, 'till some enlivening effect is perceived from them,

and a dram after everything heavy; one hour and a half after dinner, another walk; between tea time and supper a game with cheerful company at cards, or any other play, never too prolonged; a little light reading; jocose, humorous company, avoiding that of popular Presbyterian ministers and their admirers, and all hypocrites and thieves of every description. Lastly, the company of amiable, handsome and delightful young women, and an enlivening glass."

It is evident that Brown's clientele had little to complain of the novelty of his treatment. Adversity marked the last days of his life, which came to a close in 1788, when only fifty-two years of age.

SEPTIC HEART-PAUSE.

By A. K. Bond, M.D.,

Baltimore.

DESCRIPTIONS of the Stokes-Adams disease indicate that it is a condition of slow heart. My patient (whose history follows) did not have slow heart; he had a definite heart-pause of about 15 seconds, with beats at normal intervals when they did occur. Compression of the auriculo-ventricular bands in laboratory experiments does at times produce a heart-pause. It may be that such experiments throw light on my case. As the attacks were plainly due to intestinal sepsis, I have entitled my paper "Septic Heart-Pause."

As my attitude toward the patient was that of a therapist, I do not consider it necessary to review the literature of heart pathology, or to describe physiological laboratory experiments.

I do not know whether any other similar case has been reported. I do know that none of the recognized heart remedies of the modern textbooks were of the slightest value, either in the hands of the family physician or in my own. It was one of those desperate cases where we must leave the beaten path and think for ourselves.

The case was reported by me in February, 1908, to the Baltimore City Medical Society, and seemed to have no parallel in the practice of any member present. Possibly its publication may be an aid to the mastery of some similar problem in the practice of a reader. I am aware that the treatment may seem rash, but I have made a lifelong study of purges, and was applying drugs which, though feared by some, are, when used in proper doses and in

suitable cases, among the best and most manageable in the pharmacopeia. The popular writers on therapeutics of the present day do not know how to use croton oil, and so condemn it. Its proper initial dose is about one-tenth of a drop, when its action is very gentle. The drop doses recommended by writers on therapeutics are harsh, depressing and unjustifiable in ordinary practice. (I have published my views in full elsewhere.) Croton oil, moderately used, is invaluable for quickly initiating bowel action, with soothing of the stomach and preparing the way for the more abundant evacuation by more sluggish and disagreeable drugs. In some seasons it is more frequently needed; in others, seldom, according to the character of the digestive disorders prevalent. During the last year it has not been needed. But to return to the patient:

History.—The patient is a large, active, robust country gentleman, now 36 years of age, the successful business man of his neighborhood, on the Potomac river. He has for many years had an old aortic stenotic murmur of unknown origin, which ordinarily produces no disease distress whatever. The patient is married, and has children. He has never contracted venereal disease; he uses neither alcohol, coffee nor tobacco.

The first time I saw him was in May, 1906, during convalescence from an alarming attack of heart disturbance, following overstrain. It came on suddenly during great muscular exertion, following a heavy meal. His family doctor said the patient's pulse had been down to the neighborhood of 27 beats a minute, with intermissions sometimes of 10 seconds, and thought he had rescued him from death by the use of heart stimulants. When I arrived the pulse had returned to normal.

The bowels had moved well under purges. The patient was eating, digesting and sleeping well. There was flatulence; urine showed no albumen.

Apex beat at that time was normal, with no sign of hypertrophy nor dilatation; a soft but distinct systolic murmur was heard all down the sternum and up the length of the carotids, with about equal intensity; all the valves closed normally. I got at that visit no history pointing to any other diagnosis than acute overstrain of a stenotic heart. Several attacks had occurred in recent years, always after exertion on a full meal, during one of which Osler saw him and was said to have considered it acute heart-strain on a chronic valve lesion. After each of these attacks he came back into full health.

Present Attack.—The patient ate a very large meal one evening, and next day the attack began. For a week his physician strove to restore the heart to normal action without success. In fear that

he would die if the distress, which was much greater than ever before, were not relieved, I was, on June 29, 1907, again summoned. The alarming conditions were persistency of the abnormal heart-pause in spite of remedies; inability to sleep; unconsciousness, with biting of the tongue during the pauses; a sort of Cheyne-Stokes respiration, with tossing of body toward the end of each pause, and lack of nutrition. His physician had secured by enemata brownish liquid stools, most of them very foul. Morphia hypodermics had given only temporary quiet. Strophanthus, eight drops by mouth, had done no good. Hypodermics containing strychnia 1-30, digitalin 1-100, nitroglycerin 1-100, atropia 1-250, were given several days before my arrival, without appreciable effect for good. He took only beef extract and water.

I found him in bed, with sodden face, neither puffed nor blue; with an occasional flush of red over the cheek bones; with normal, equal pupils; tongue rather large and coated; body and limbs warm; abdomen flatulent; no dropsy; intellect clear when heart beat; no great wasting of body. The heart cycle on my arrival was as follows, continuing thus hour after hour, with not a single minute of natural action:

The pulse at wrist would beat with normal fullness for 30 seconds, making 34 beats; then for 15 seconds there would be a pause. At times this pause would be ushered in by intermissions of two or three beats, followed by a normal throb; then the long pause. At times the cessation of pulsings would be absolute for 15 seconds, or even for 20 seconds. When the pause began he would lie quite still; then a sort of Cheyne-Stokes breathing would set in; he would struggle and toss, with jerking and twitching of hands; unresponsive to questions, and just when it seemed to me that a convulsion must certainly occur, the *full* blood column would come surging back into the collapsed artery, respiration would become normal, he would converse normally, put his hands clasped above his head, ask for water, lift his head from the pillow to drink it and look as if he had not been sick at all. This had been about his condition night and day for the whole week. He was not allowed to sit up; the exertion of stools on the bed-pan did not seem at all to exhaust him. It was evident, however, to all that eventually convulsions or general breakdown must occur if he were not relieved. During the pauses the apex-beat could not be felt; neither could the valve sounds nor the aortic systolic murmur, else distinct, be heard, but at times a rather rapid throbbing could be felt on pressing with the fingers just above the clavicle. The temptation to trace out in detail the symptoms which pointed to the Stokes-Adams conditions was very great, but I had been summoned as a therapist. The physician in charge politely stood aside, confessing that he did not know what more to do than he had done.

I did not know what to do either, but it was my business to find out. I began by testing the doctor's remedies. The hypodermic of morphia being due, I gave one-sixth. It had no effect on the heart-cycle, though it gave a little sleep. Neither did the aforesaid Mulford tablet, nor brandy (an ounce with a drachm of valerian), nor a hypodermic of strychnia (one-thirtieth), which hardened the pulse and rather increased the length of the pause. I decided, therefore, that the patient needed a thorough purging of the bowels, and for these reasons: The patient had over-eaten; the stools had been extraordinarily offensive, and scented the whole house; the abdomen was full of gases; the tongue was foul.

When morphia hypodermics fail, my experience teaches that often there is bowel sepsis present. The urine being free, sepsis would probably be intestinal, not uremic.

The patient would bear the purging for these reasons: The heart, when it did beat, was strong, filling the arteries; the clear intellect during the beat periods indicated fair nerve nutrition; the warm body and vigorous changes of posture during the beat periods showed considerable strength; Stokes-Adams observations teach that many intermittent hearts are fairly strong; previous stools had not weakened him; in cases of bowel sepsis, careful purgation strengthens the heart. The case was evidently becoming desperate, justifying heroic remedies.

I had with me fresh-made cathartic pills of a favorite formula and some one-twelfth drop fresh pills of croton oil, a drug which I have very carefully studied and greatly trust in selected cases.

Treatment.—Just before noon I gave one and a half of the cathartic pills, securing several watery, dark stools, with an odor as of the opened cadaver, which filled the house. At 6 P. M., as the heart-pause was not appreciably affected, I gave two of the croton oil pills. The stools increased in volume, each nearly filling the bed-pan, with the same odor. At 8 P. M. the patient was decidedly stronger and more comfortable, the pauses being now so short that there were four or five cycles in the minute. At 10 P. M. the pulse and respiration were quite natural, and so continued throughout the early morning, the patient looking, talking of his business and acting like a healthy, rather tired, man. During the early night several dram doses of bicarbonate of soda were given, under the apprehension that there might be an underlying glycosuric condition. Fermentation test, however, made during the night, showed no sugar, nor was there any history pointing toward glycosuria. This night urine contained no albumen. I ascribed the convalescence to the croton oil and watery purging.

He seemed so completely recovered by morning that I allowed his attendants to leave him alone for a while.

Relapse.—To my dismay, on going upstairs at 9 o'clock, after

breakfast, I found him apparently dead. He was lying on the bed without pulse, without respiration, unresponsive to call, with a death-like pallor, and cold to the elbows.

It was, indeed, a heart-pause! Presently the pulse returned—not feebly, as after a faint, but with the artery-filling tide as in previous observations, yet with less energy than before. A hypodermic of strychnia, one-thirtieth, did not, after half an hour, improve the pulse nor lessen the pauses. As the bowels had not moved for several hours, I reasoned that the relapse might be due to septic residues not purged away, and so at half past nine gave him one croton oil pill. By early afternoon, under liquid purgings similar to those of the day before, the pulse returned toward normal.

It now occurred to me that the septic material which was poisoning the heart was the beef extract, which was his only food. This extract was made by one of our best firms, and its purity and freshness was beyond question, but possibly it might be decomposing in the bowel in contact with old poisonous meat residues of the originally-poisoning meal eaten a week before! Under this supposition I discontinued meat food, and gave only vegetable substances. Panada (of bakers' bread) and roast potatoes were eaten with relish, and the stools became less liquid and lost the peritoneal smell.

Heart-pause did not even threaten after this change of diet on the afternoon of the relapse, although severe purging was discontinued, and croton oil was given only once more—on the following morning. The patient was now a man with feeble digestion—without flatulence—and a fatigued heart, sweating heavily, complaining of feeling weak, no longer drinking great quantities of deep artesian water, as at my advent; complaining of aches in back and elsewhere, just like an ordinary man invalid. I left him to his family physician, and for later weeks received reports of his steady convalescence.

P. S.—During the autumn the patient visited me in Baltimore, and seemed in excellent health, able to attend to his large business enterprises, though somewhat nervous at times. In January, 1908, six months after the attack, he wrote me concerning a business matter, and seemed in full health. On a visit to me during the present year, 1909, the patient said that he regained full health after the illness. Although greatly harassed by business cares and financial losses, his health remained good, except a slight neurasthenia from these strains. There had been no return of the heart disturbances.

Current Literature.

REVIEW IN GYNECOLOGY AND OBSTETRICS.

Under the Supervision of A. Samuels, M.D., Baltimore.

(Continued from January Number.)

ABORTION.

(3) *Sepsis*.—It is, as a matter of fact, especially in debilitated patients that sepsis mostly occurs. In such subjects special care must be devoted to antisepsis and asepsis, and the most scrupulous cleanliness should be insisted upon. The physician should be particularly on the alert when he finds himself confronted by a case of partially detached placenta which so readily undergoes decomposition or persistent bleeding, with partially dilated cervix. These two conditions specially favor septic infection.

Fetor of the lochia may mean infection, which is followed by a rise of temperature, with shivering and abdominal pain. These symptoms generally indicate the invasion of pathogenic organism.

When proper antiseptic measures have been taken, and when the woman is properly looked after, the abortion mortality in hospitals does not exceed 0.81 per cent., while it is 27.3 per cent. in women in whom abortion has taken place at home. The prognosis is especially grave in cases of criminal abortion, because the operator's fingers and instruments are septic more often than not.

We will not discuss the puerperal sequae, the diagnosis and the course to pursue according to the particular circumstances and conditions.

The discharge that accompanies miscarriage varies, according to the more or less advanced period of gestation, whether the abortion takes place en bloc or the placenta be retained more or less completely in the uterine cavity. During the first two months the discharge is trifling, and if the patient be properly attended, it will cease with a few days' rest. Under the ordinary conditions of life many women pursue their occupations without troubling about it at all. At the end of the third month and during the fourth month abortions take place in two stages, and the bleeding is more abundant. Debris of decidua, membranes and placenta are mixed with lochia, turning the latter a chocolate color and a syrupy consistence. We must carefully note the odor of this discharge, taking the temperature every day, and enforcing rigorous aseptic and antiseptic precautions.

The secretion of milk hardly occurs before the third month. When the fetus dies there is a rise of milk, which recurs in a feeble sort of way on the expulsion of the ovum, or rather two or three days after.

The uterus not being enlarged, involution takes place rapidly after abortion, especially if the patient goes to bed and takes proper care of herself. More or less protracted retention of the placenta, however, is a common cause of subinvolution, and if the woman resumes her occupations too soon, the uterus is apt to remain enlarged and congested. Anything that delays uterine involution favors metritis.

In most cases it is easy to recognize impending abortion. The woman knows herself to be pregnant; the signs of pregnancy are obvious; the discharge of blood, the painful contractions, the softening of the cervix, the enlargement of the uterus, the presence of clots in the half-dilated os uteri, the possibility of feeling the ovum inside the cervix, etc., are symptoms of threatening abortion; indeed, we can often determine the cause thereof. It does, however, sometimes happen, especially during the first two months, when it is impossible to be quite certain of the existence of pregnancy, that we may hesitate whether it is miscarriage or whether the symptoms are not due to some other cause. The diagnosis is all the more delicate, seeing as yet there is no incontrovertible sign of pregnancy and the usual sympathetic indications are wanting. This is often the case in women who menstruate irregularly; in women who fall pregnant during a period of amenorrhea or during lactation, and who consequently cannot attach any particular importance to the absence of the flow. Then, too, examination may be rendered extremely difficult by the existence of a thick layer of subcutaneous abdominal fat, or we may have to deal with women who are approaching the menopause, and entertain no suspicion of pregnancy.

It is unnecessary to recapitulate the signs of pregnancy and its diagnosis at the various periods, but it is important.

It sometimes happens that a woman who is merely dysmenorrhic believes herself pregnant, so that when the period returns it is attributed to a miscarriage. In abortion the bleeding usually precedes uterine contraction, the cervix is partially dilated and soft and clots are plentiful. In dysmenorrhea the pain precedes the blood-stained discharge, the os uteri is closed, the uterus is small and there is no softening of the vaginal cervix.

The empty uterus in retroflexion may lead us to suspect pregnancy, but the state of the cervix, the persistence of menstruation, the absence of the elasticity peculiar to the gravid uterus and the absence of any sympathetic manifestation will enable us to discard the idea of miscarriage. Nevertheless, we may find considerable

difficulty in cases in which there is concomitant metritis or fibroids, for in such cases the uterus is often enlarged, the cervix more or less softened and there is some bleeding, so that a certain diagnosis may be quite impossible for the time being at any rate.

We must not mistake for threatenig abortion various painful manifestations that may supervene in a pregnant woman, such as hepatic colic, nephritic colic, flatulent distention from constipation, the pain of appendicitis, hemorrhoids, etc.

Some bloody discharges *do not* come from the uterus, and have nothing in common with miscarriage: indeed, even a perfunctory examination may suffice to show that the blood comes from the anus (hemorrhoids), or from an organic lesion of the cervix or vagina, rupture of the varicose vein or local traumatism.

Has Abortion Already Taken Place?—Though this may appear to be a very simple question, it is often far from easy to answer: indeed, we may not be able to decide. During the first few weeks the ovum is so small that in many instances it escapes notice. Most women think it is merely the return of the menstruation, and they attribute the clots, colicky pain and unusual abundance of the flow merely to the delay. It may happen, however, that everything has been thrown away before the physician appears on the scene, or the patient, feeling constrained to go to the closet, has there passed a formless mass without its attracting her attention. The practitioner, under these circumstances, may be much embarrassed in making up his mind whether or not the miscarriage has actually taken place; the difficulty is enhanced should the fetus be dead and be retained for a variable period in the uterine cavity. The subsidence of the sympathetic phenomena of pregnancy, a slight rise of milk and a diminution in size of the uterus may lead us to think that everything has come away, whereas the withered, shriveled ovum is still lying in the uterine cavity.

Even when the practitioner has everything before him, it is often difficult during the first five or six weeks to form an opinion, owing to the small size of the ovum. We must examine the clots and debris very carefully under a fine stream of water, looking out for chorionic villi, and, if necessary, it may be examined under the microscope. In medico-legal cases it is advisable not to formulate an opinion without substantial reasons for asserting that abortion has taken place, and the greatest prudence and circumspection should characterize reports drawn up for the tribunals.

Sometimes clots accumulate between the external walls and the ovum in consequence of interutero placental hemorrhages. These clots are expelled bit by bit in the form of a reddish-brown discharge, which persists for rather a long time. This does not constitute abortion, because the ovum may still be growing.

It is not always easy to decide whether the abortion is complete.

Examination of the fetus and placenta will afford sufficient information, but it often happens that part of the membranes and clots have been thrown away, so we are left in doubt. We may, however, conclude that the placenta in whole or in part has been retained, when the uterus remains big and when we detect parts of the afterbirth within the uterus.

In presence of a miscarriage we must endeavor to ascertain its cause by close questioning, in view of the prophylactic treatment to be adopted, to prevent its recurrence in the event of subsequent pregnancy. But too often the abortion is the result of a criminal operation, and the woman in this case will not admit a possible miscarriage or of having had an abortion done. The other three principle causes of abortion are syphilis, albuminuria and vicious insertion of the placenta. In abortion due to syphilis, the fetus is born dead and macerated, and there is very often a history of previous miscarriages. We may discover signs of syphilis in the father or mother or both. If it be due to albuminuria, the placenta presents changes of a special kind, with patches of hemorrhage; the urine contains albumen, and there are symptoms of nephritis. In vicious insertion of the placenta we get repeated attacks of bleeding, and when we examine the membranes it is seen that the placenta was inserted into the inferior segment. Should none of these causes be discoverable, we must go over the causes enumerated in connection with the etiology of abortion.

Preventative Treatment.—The pregnant woman should be subjected to special rules of hygiene; she should avoid anything jeopardizing the life of the product of conception. So far as her social position and duties allow, she should take plenty of rest, without, however, shutting herself up at home, fresh air and exercise being indispensable to her welfare. She should abstain from fatiguing exertion, hurrying and frequent traveling, these being the determining causes in many cases of abortion. Sexual connection should be infrequent. Pregnant women should wear loose clothing, so that nothing may hinder the development of the uterus. Dancing; horse exercise and swimming should be forbidden. Short baths, not too hot, are permissible, but vaginal injections should be very prudently employed, unless there be copious leucorrhea. The vulva, on the other hand, should be frequently washed. Constipation should be overcome by the methodical use of mild laxatives, enemata, etc. We need not insist on the various details that belong to the hygiene of pregnancy, merely observing that our precautions should be enforced all the more strictly when there is a history of previous abortions. It is sometimes necessary to keep the patient on her back on a couch throughout gestation.

Preventative medication will be directed more particularly to the determining causes of the abortion. Syphilis should be treated

from the very onset of pregnancy, and this applies also to mercurialism, plumbism, etc. When the pregnant woman is living under unfavorable conditions of health, hygiene, ventilation, etc., we must treat everything that may interfere with the course of gestation.

These precautions having been taken, the practitioner will not be exposed to reproach whatever happens. Should symptoms of threatening abortion supervene, he will follow the course that has been laid down.

Threatening Abortion.—There may be pain and bleeding, although the ovum is still intact and although there may be no other accident (infection, fever, intense anemia from repeated hemorrhages), no signs of death of the fetus (disappearance of the sympathetic features of pregnancy, rise of milk); still, it does not follow that abortion is inevitable. Under these conditions we must do our best to stop it. The woman is to be kept completely at rest, with the head low and the pelvis slightly raised. Opium may be given in full doses. The rectum having been cleared out, an enema may be given containing 20 to 30 drops of liquid extract of opium in four fluid ounces of water. This may be repeated several times a day, to the extent of 100 drops of the drug in 24 hours. Under this treatment the contractions often diminish in frequency and intensity, the flow is reduced and the signs of impending abortion gradually clear up. Chloral may be combined with laudanum to enhance its effects, or we may prescribe fluid extract of *virburnum prunifolium* in 10-drop doses, five or six times in 24 hours, as an adjuvant to the other treatment.

When matters are urgent, injections of morphine are preferable to laudanum, for its effects are prompter. Beginning with a sixth of a grain, this dose may be repeated, if the patient bears it well, once or twice in the course of the day.

Throughout the case we must abstain from vaginal examination as far as possible, in order not to provoke uterine contraction, and this remark applies equally to very hot injections and to vaginal injections in general, except for the purpose of cleansing the parts. In such case the temperature of the water should not exceed 99° F., and the douche need not be raised more than two feet above the level of the head.

Abortion is inevitable. In spite of all the precautions we have enumerated the symptoms of abortions may persist, the bleeding continues, the contractions recur, or the membranes may rupture, or the fetus may succumb, or the bleeding may be so copious and the ovum so far down that we can no longer hope to arrest the process. Under these circumstances, we must, as in ordinary labor, carefully disinfect the external genitals, frequently washing the vulva, administer antiseptic injections, which will check the

hemorrhage and cleanse the vaginal canal. An antiseptic compress is applied to the vulvar aperture, and then we can wait events. Several things may happen.

The ovum may be infected in spite of its being intact. Pack the vagina in order to expedite expulsion, and if nothing happens in the course of the next few hours, anesthetize the patient, disinfect the genital tract, practice gradual dilatation of the cervix and clear out the uterus by curettage and abdomino-vaginal expression.

When the ovum is ruptured and the fetus expelled, our conduct will depend upon circumstances.

In the presence of copious and repeated hemorrhage we may pack the vagina, as this is both hemostatic and stimulates uterine contraction, thus promoting the complete detachment of the placenta and its expulsion. Against this course it is objected that often the packing is badly done; that it is very uncomfortable for the woman; that it is ineffectual in that it does not prevent the hemorrhage going on the inside, while it dams back the clots and opens the door to infection.

To overcome these drawbacks, it is well to pack the uterus itself with antiseptic gauze, and unquestionably this procedure may render great service in urgent cases, in which the woman is too weak to bear digital curettage, when, in fact, it is necessary to improve her general condition before doing anything. Except under these circumstances, the procedure is best avoided, for the plugs may be the means of conveying infection. Curettage is preferable, for it arrests the hemorrhage by emptying the uterus and affords an assurance against further anxiety. This last point is important, because the practitioner may be living at a distance, with no one at hand to replace him at the bedside.

When the placenta is partially detached and is extruded through the os uteri, or has actually passed into the vagina, we may be tempted to try and withdraw it with the fingers or forceps. This must not be attempted, unless we are prepared to do a curettment, as the placenta may be torn, thus increasing the hemorrhage to such an extent as to prove dangerous.

There may be retention of the placenta after abortion and expulsion of the fetus without any subsequent hemorrhage or infection, and when this is the case it is better to wait. In most instances the contractions return in the course of a few hours. Ultimately, the afterbirth comes away with little or no bleeding, and the matter is at an end.

The next question is, How long should we wait in cases of placental retention unaccompanied by accidents? This is somewhat uncertain. The placenta has been known to remain for several weeks inside the uterus without undergoing decomposition, and has ultimately been expelled. We must, therefore, let circum-

stances decide for us. If we decide to await events we must keep close watch on the patient—the temperature should be taken every few hours. Should symptoms of infection show themselves, the uterus should be emptied under strict antiseptic precautions.

In cases in which there is neither bleeding nor fever, it would be imprudent to leave the placenta in situ for more than four or five days. To delay any longer would be only to add to the chances of infection, hemorrhage and the transformation of the placenta into a polypus or deciduoma, etc. It may be added that in cases of dead, macerated fetus, double or multiple abortion, the placenta ought to be extracted forthwith.

There are two ways of extracting the retained placenta—instrumental curettage and digital curettage. Each method has its advocates and its adversaries. Some prefer the curette during the first two months, because, they say, the uterus is small and its walls are thick and resisting enough to obviate any risk of perforating the uterus. They urge that it is easier to introduce the curette without having to dilate the cervix and without inflicting any further injury. Skillfully handled, it does better work than the finger; furthermore, the instrument is cleaner and easier to sterilize than the finger. If the placenta be in a state of putrefaction, the finger is contaminated, and may disseminate the germs all over the uterine mucosa. These dangers are reduced to a minimum when the curette is employed. Others assert that the curette is a blind instrument, which exposes the patient to the risk of perforation; which does not afford any trustworthy information as to whether or not everything has been removed, and we may, after all, leave placenta debris in the uterus. Assuredly in inexperienced hands the curette may prove a dangerous instrument, either because the practitioner lacks the courage to push the curette until he gets the unmistakable “uterine squeak” or because he goes too far, and passes the instrument through the friable uterus into the peritoneal cavity.

Some obstetricians advise against instrumental curettage. Of course, when for any reason digital curettage is not practicable, we must employ the curette. Whichever method is adopted, antiseptic precautions are necessary.

Having said this much as to the different procedures, intervention is formally indicated:

(1) When the placenta has been retained beyond the generally approved limits (4 to 5 days).

(2) When the symptoms of infection make their appearance or when there is serious hemorrhage, either on account of its abundance, its persistence or its recurrence.

2003 McCulloh street.



WILLIAM H. WELCH, M.D.,
President.

MARSHALL LANGTON PRICE, MD.,
Secretary.

HOWARD BRATTON, M.D.

LOUIS A. GRIFFITH, M.D.

JAMES BOSLEY, M.D.

DOUGLAS H. THOMAS, JR.

HON. ISAAC LOBE STRAUS.

Under the Direction of the Secretary of the State Board of Health

HEALTH LEGISLATION FOR MARYLAND.

THE popular interest in health matters has increased in geometric ratio in the past few years. The growth of practical sanitation and in popular knowledge of disease has been greater in the past 20 years than in the preceding two centuries; in the past 10 years greater than in the preceding 100 years, and in the past five years greater than in the preceding 50 years.

The public now realizes that it needs protection of health and life, and it has begun to demand of the State the fulfillment of its needs.

The arguments advanced for the appropriation of money toward the control of disease are generally included under two heads: First, the direct prevention of disease and sickness; second, the prevention of economic loss. There is no satisfactory unit of measure available for sickness and death and the other items of human suffering, but the economic loss from disease and death are capable of measure, or at least of approximation. In an age where conservation of resources is the watchword of the State and the National governments, the fact that the loss from preventable disease in Maryland among its wage-earners alone exceeds \$50,000,000 annually should furnish food for thought for our citizens and legislators.

The amount of money appropriated in the State of Maryland for public-health work is smaller than in any of the States where the health forces are effectively organized. This fact becomes strikingly apparent when the appropriations of the several States are compared on the basis of population. Maryland, with a population of about 1,300,000 in round numbers, appropriates \$20,000 to its Health Department, while Florida, with about one-third of the population, appropriates \$50,000. The annual appropriation to the Pennsylvania Department of Health is now \$3,000,000 per annum. There is evidence that Maryland is now taking a more enlightened view of its public-health necessities, and that in future legislation a sufficient amount of money will be made available to properly conduct the health work of the State. The State

Board of Health is asking the Legislature this year for legislation along several lines, most of which call for additional appropriations. The work of the board has become so far expanded that the organization of bureaus is necessary to properly handle the situation.

The board will ask for the creation of five bureaus—a bureau of communicable diseases, a bureau of vital statistics, a bureau of sanitary engineering, a bureau of bacteriology and a bureau of chemistry. The rudiments of all these bureaus, excepting the bureau of sanitary engineering, already exist in the board, and all that is necessary to put them on a working basis is increased appropriations and a larger force. The special legislation contemplates the appointment of a chief and an assistant chief for each of these bureaus, and the necessary clerical force. The necessity for a bureau of sanitary engineering to handle the problems of water supply, sewage disposal, lighting, heating and ventilation of public buildings is especially urgent. In connection with this bureau the board contemplates the passage of legislation similar to that existing in Ohio, Massachusetts and other States giving the board control over public systems of water supply and sewage disposal. This legislation will prevent towns, cities and corporations from establishing systems of water supply and sewage disposal, unless the plans for the same are approved by the State Board of Health. This will give the board an opportunity to exercise its proper functions of prevention rather than to interfere after epidemics caused by improper water systems and improper disposal of sewage have arisen.

The board also asks for additional appropriation on account of tuberculosis. The laws of Maryland for the regulation of tuberculosis have been models for 10 or more other States, and have become widely known under the name of the "Maryland system." The work of the board in relation to tuberculosis is rapidly and automatically expanding. The annual appropriation available is \$5000, and this amount the board wishes to increase to \$10,000. The annual expenditures of the board on account of tuberculosis are now over \$7000 annually, and the Board has only been able to avoid a deficit by carrying over the balance of the appropriations of preceeding years. The State Board of Health has also been publishing a popular health bulletin, and is asking this year for an appropriation of \$1000 to continue its publication. The publication of popular health bulletins is of great value from the standpoint of popular education, and bulletins of this character are now published by nearly all the State departments of health.

OTHER HEALTH LEGISLATION.

The Medical and Chirurgical Faculty of Maryland has drafted this year a number of excellent pieces of legislation. The most important of these is the Pure Food and Drug bill. This bill is one of the best State laws so far devised along the lines of the National Act. The committee has done an invaluable piece of service for the State in its endeavor to secure an effective and honest law and a proper administration. The drafting of this bill was undoubtedly the cause for the presentation of the bill of the Legislative Commission in its present form.

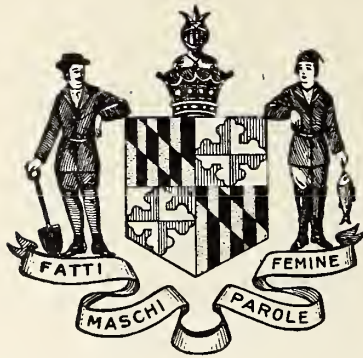
The committee of the faculty has very wisely given its support to this bill, which contains all of the features really essential for an effective law which were incorporated in the faculty bill. Owing to the work of the faculty's committee, the medical profession can now unite on the Legislative Commission bill, and there is every reason to suppose that it will be passed without opposition. Another bill prepared by the faculty is the bill for the regulation of the practice of midwifery. There is no other form of medical practice where the potentialities for harm from ignorant and unskilled treatment are so great as in the practice of midwifery. No amount of medical skill, training and learning is too great to properly treat obstetrical cases. The practice of the accoucher may involve the life and health of the mother, the life and future health of the child, and may decide whether or not the child shall become a valuable citizen, in the full vigor of health, or a sightless charge upon the State. The evils of the practice of midwives are well known, but the remedy is a far more difficult problem. Many of the poor and those living in remote districts must depend upon the practice of midwives, or give birth to their children unassisted.

The faculty bill has met, we feel, these practical problems successfully, and has imposed educational standards that any woman of good intelligence should be able to meet. The law provides a degree of elasticity which will enable the standards to be raised as soon as the material is available. The endeavor to furnish poor and unfortunate mothers in the peril of childbirth with attendants of at least ordinary knowledge of the grave problems which are to be met cannot but receive the approval of all physicians and public-spirited citizens who have the real welfare of their fellow-men and fellow-women at heart.

The abattoir bill was designed by the State Board of Health to meet the popular demand for some means of making a public meat supply available derived from healthy and sound animals, and which was prepared under proper conditions of cleanliness. The essence of the bill is to make the sale of unstamped and uninspected meat unlawful in communities where the bill is in effect. The bill cannot be made available in the remote country districts, excepting at a prohibitory expense, on account of the cost of inspection. On this account the bill at first contained a local-option clause, but this has met with some objection from some of those interested.

The bill, if passed without this clause, will contain in its stead a clause defining the territory in which the bill shall be effective. A part of the cost of operation will be assessed upon the communities in which inspection and stamping is required.

The conditions for public-health legislation are more favorable this year than they have ever been before, mainly on account of the aroused public sentiment. The economic argument is effective, because the sanitary needs of the State can be more accurately measured upon this system. If the State is to invest money in any problems of conservation, we know of no way in which greater returns can be expected in mere dollars and cents than in the protection of the public health.



MARYLAND LUNACY COMMISSION.

ARTHUR P. HERRING, M.D., Secretary.

HENRY M. HURD, M.D.

HUGH H. YOUNG, M.D.

JOHN D. BLAKE, M.D.

R. MARKLEY BLACK, M.D.

ATTORNEY-GENERAL ISAAC LOBE STRAUS, ex-officio.

This Department is Under the Direction of the Secretary of the Commission



HE LETTERS requested on the opposite page should be sent to the following members of the Legislature:

SENATE.

Committee on Finances—Senators Price, Biddison, Beasman, Campbell, Lee, Linthicum, Dodson, Goslin and Griffith.

Committee on Sanitary Condition of State—Senators Wells, Moore, Campbell, Miller and Matthias.

HOUSE OF DELEGATES.

Committee on Public Hygiene—Delegates Ashby, Jarrett, Hayden, Coghlan, Keys, Peters, Garrett, Melis and Rose.

Committee on Ways and Means—Delegates Benson, Hayden, Marriott, Jarrett, King, Draper, Tate, Cosden, Williamson, Dawkins, Pairo and Ausherman.

A Personal Appeal

TO EVERY DOCTOR IN MARYLAND



HERE are now before the Legislature two bills providing for the State care of the insane. You are doubtless aware of the horrible condition in which the indigent insane of this State are kept in various county almshouses and jails.

The Lunacy Commission is asking for a bond issue of \$500,000 to provide a hospital for the negro insane and for additional buildings at the three existing hospitals, so that all of our insane and feeble-minded can be cared for in a scientific manner by trained psychiatrists.

These provisions for State care will only add to the State tax one-half cent on the hundred dollars.

This paltry sum will enable us to cure many cases that now become hopeless lunatics, will provide occupations which will not only make these unfortunates much happier, but also a source of considerable revenue to the State, and will reduce the county tax rates considerably. Above all, it will remove the disgrace of present conditions and put Maryland in her rightful place among the progressive States.

We therefore request that you write at once, briefly, but forcibly, to your representatives and friends in the Legislature and also to the Governor, insisting on the imperative necessity of passing these bills without delay.

We physicians should advise our legislators on medical questions, and I hope you will not fail in this opportunity to do a small but important duty by writing at once. Respectfully,

HUGH H. YOUNG,
President of the Lunacy Commission.



JAMES BOSLEY, M.D.,
Commissioner.

C. HAMPSON JONES, M.D.,
Asst. Commissioner.

THOS. L. RICHARDSON, M.D.,
Asst. Commissioner,
Quarantine.

M. HARRY LAIB, Secretary.

Bacteriological Laboratory:
WM. ROYAL STOKES, M.D., Director.

Chemical Laboratory:
W. E. HOFFMAN, JR., Ph.D., Director.

This Department is Under the Direction of the Commissioner of Health

OPSONINS AND OPSONIC TREATMENT.*

BEFORE describing opsonins, it is necessary to consider briefly the development of our knowledge concerning the great protective properties of the leucocyte or white blood corpuscle. After the discovery of the white blood corpuscle by Nassé, Addison and Waller it remained for Cohenheim to show that during inflammation the leucocytes emigrate through the capillaries and small veins and enter the tissues. It must have been obvious to this great student of inflammation that the white blood corpuscles wandered through the blood vessels for some special purpose, and yet he never clearly understood the real reason for the great phenomenon of emigration in inflammation which he so clearly described in his lectures, published by the New Sydenham Society in 1889.

It remained for another great master, Elie Metchnikoff, to show by numerous experiments and observations that the white blood corpuscles enter the tissues during inflammation in order to attack and destroy the invading bacteria. If it were not for this fact the slightest local pustule would advance unrestricted, and result in general septicemia. It may be of interest, therefore, to consider a few of the many studies of phagocytosis which Metchnikoff has included in his fascinating book on "Immunity in the Infective Diseases."

This observer began his work by observations on an infectious disease of the lowest form of animal life—the unicellular ameba. These organisms often become invaded by a small vegetable organism called the microsphaera, and the amebae defend themselves by forming a digestive vacuole, or miniature stomach, around the invading parasite. This digestive vacuole secretes a ferment like

*Read at the annual meeting of the Anne Arundel County Medical Society, January, 1910.

trypsin, which acts in an alkaline medium, and if the ameba is not invaded by too many microsphaerae, it dissolves and destroys them. If not, then the invading parasites gain the upper hand, and the ameba is destroyed.

It would be most interesting to follow the observations of Metchnikoff among the various higher subdivisions of the animal kingdom, but they all point to the same conclusion, namely, that these animals are able to defend themselves against invading parasites by this process of intracellular digestion, which is called phagocytosis. This process in the human being is therefore inherited from the lower animal, and, as it frequently enables man to overcome such infections as tuberculosis, pneumonia, pyogenic infections, septicemia and gonorrheal infections, it is now proper to consider just what part the opsonin plays in aiding phagocytosis.

The name opsonin was proposed by Sir Almroth E. Wright, who has introduced this treatment into modern medicine. It is derived from the Latin verb "opsono," meaning "I prepare a meal for," and this is exactly what the opsonin does for the white blood corpuscle. This opsonin is present in the serum, and when bacteria enter the blood stream it acts upon them in such a way that they are more easily taken up, digested, and destroyed by the leucocytes. These leucocytes must act in the presence of a serum containing opsonin, and if you wash all of the serum out of the leucocytes and mix leucocytes, salt solution and bacteria, leaving out the serum, the leucocytes refuse to take up the bacteria, and this shows that the opsonin is in the blood serum.

TECHNIQUE OF OPSONIC INDEX AND STANDARDIZING VACCINES.

The opsonic index is computed by comparing the number of bacteria taken up by the patient's leucocytes to the number taken up by the leucocytes of a healthy person. In order to obtain a large number of white corpuscles about 40 drops of blood are allowed to flow into 10 cc. of normal salt solution containing 1.5 per cent. of sodium citrate. This prevents the coagulation of the blood, and the leucocytes all collect on the surface of the column of red blood corpuscles when the mixture is centrifugalized for 15 minutes. The serum is collected by allowing 20 drops of blood to flow into a second tube without any fluid, and the serum quickly separates from the clot when the blood is centrifugalized. The supernatant fluid is then removed from the first tube, and the corpuscles are washed by centrifugalization in salt solution to remove the serum. A small drop of salt solution is left in the tube, and the object is to mix equal parts of leucocytic cream, serum and bacterial emulsion, and this is done in the following manner:

The leucocytic cream is gently detached from its supporting column of red blood corpuscles by means of a platinum loop of 4 millimeters in diameter. It is then carefully mixed up in the drop of salt solution without an admixture of red blood corpuscles. One

loopful of this mixture of white blood corpuscles is placed upon a clean slide; while still fluid the leucocytic cream must be mixed with bacteria, and this is carried out in the following way: For practically all organisms, except the gonococcus and tubercle bacillus, a 24-hour growth on slant agar is used. This includes the large group of pyogenic bacteria and the pathogenic intestinal organisms. A suspension of the growth is made by washing off the surface with 1 cc. of sterile salt solution. This suspension is then poured into a sterile tube for further use. By means of the same platinum loop, 1 loopful of the bacterial suspension is mixed with the previously mentioned loopful of leucocytic cream. To this mixture we simply add a loopful of the clear serum obtained by centrifugalizing the patient's blood. We now have a mixture consisting of an equal part of leucocytic cream, bacteria and blood serum, and this mixture is drawn up into a fine capillary tube by means of a rubber nipple attached to the end of the glass tubing by means of a fine rubber band. The end of the tube is sealed off in a flame, and the mixture is incubated at 37 degrees C. for 15 minutes.

We have described the mixture of the leucocytes, bacteria and serum obtained from the patient, and exactly the same procedure is carried out with the same suspension of bacteria and leucocytes and blood serum obtained from a healthy person. This is also incubated for 15 minutes, and both mixtures are then squirted out on different slides and carefully spread over the entire surface by bringing the edge of another slide in contact with the fluid and then lightly drawing this edge from left to right over the entire slide, making a thin spread. The slides are then stained by Jenner's blood stain, and the opsonic index of the patient is obtained by comparing the number of bacteria taken up by phagocytosis in a given number of white corpuscles of the patient to the number of bacteria found in the same number of leucocytes from a healthy person; in other words, we obtain the phagocytic index and obtain a fair idea of the amount of protection afforded in the various infections by means of the phagocytosis and destruction of these bacteria.

As a simple example, let us imagine that we have used the staphylococcus albus in order to obtain the opsonic index in a case of furunculosis. We may count the bacteria present in 100 or 500 white blood corpuscles, according to the degree of our patience. Let us say that we obtain an average of five staphylococci per leucocyte. We next count the number of bacteria found in the same number of neutrophilic leucocytes from the control blood of a healthy person, and obtain an average of 10 staphylococci per leucocyte. It is obvious that the opsonic index of the patient is 0.5, and in any count that we make, we use the healthy blood as our unit or 1.0. At a later examination we may have stimulated the production of opsonins in our patient until by an opsonic count we find an average of 20 bacteria per leucocyte, as compared to an average of 10 in normal blood. This makes an opsonic index of 2.0 for the patient, and is a proof that the defense of phagocytosis

has been increased by our treatment. As mentioned above, therefore, the unit or standard is 1, representing the number of bacteria taken up by a given number of the leucocytes of a healthy person.

STANDARDIZING VACCINES FOR TREATMENT OF PATIENTS.

We have described the above suspension of bacteria, and this can be used for stimulating and increasing the opsonins for the organism with which the patient is infected. It is obvious that we must have some method of measuring the number of dead bacteria injected, and this resolves itself into a simple problem of ratio and proportion. We mix one drop of healthy blood obtained with the platinum loop from the ear with the same amount of bacterial suspension, always using the same loop. We now have an equal mixture of bacteria and red blood corpuscles, and this is smeared over a glass slide and stained by Jenner's blood stain in the manner described above. This is then placed under the immersion lens, and 500 red blood corpuscles are counted, at the same time noting the number of bacteria in the fields in which 500 red blood corpuscles have been counted. In order to carry this out accurately it is necessary to place a small paper disc in the eye piece of the microscope. A circle of about one-quarter the diameter of the eye piece is put in the center of the disc. This presents a smaller field to view, and the number of red blood corpuscles and bacteria can be accurately compared.

Let us again take a simple example, and suppose that while we have counted 500 red blood corpuscles we have counted 250 bacteria. We are now in possession of three known quantities—the number of red blood corpuscles and bacteria present in the same field, and the number of red blood corpuscles present in 1 cubic millimeter of blood, which long experience has taught us to be 5,000,000. The unknown quantity, or x , will represent the number of bacteria present in 1 cubic millimeter of our bacterial suspension. The problem is expressed in the following way:

$$500 : 250 :: 5,000,000 : x.$$

$x = 2,500,000$ bacteria in 1 cubic millimeter of bacterial suspension.

Let us suppose that we wish to inject our patient with 100,000,000 dead staphylococci. We first heat the bacterial suspension at 60 degrees C. for one hour, in order to kill the organisms. A water bath is used for this purpose. A 24-hour culture should always be made on agar after heating the organism, in order to see that our bacterial suspension is sterile. The entire cubic centimeter of our bacterial suspension would contain 2,500,000,000 bacteria, but as we wish to inject only 100,000,000, we must dilute our suspension 25 times with salt solution, and add 0.25 per cent. of trikresol to preserve it. We then inject 1 cubic centimeter of our dilution for every dose of 100,000,000. Vaccines from the gonococcus are made by cultivating this organism on slanted blood agar, and dilutions

of Koch's old tuberculin are used for stimulating the opsonic index for the tubercle bacillus.

With slight modifications, the technique described above was proposed by Wright, who is the pioneer in the application of phagocytosis to clinical medicine.

PRACTICAL RESULTS OF VACCINE THERAPY.

It would be utterly impossible in the short time necessarily allotted me to even mention the titles of the articles which now form the literature of the so-called vaccine therapy, and I can only indicate the general results of this treatment.

Although not always successful, yet in many cases the injection of old tuberculin or other forms of tuberculin has caused improvement and cure in pulmonary tuberculosis, and other forms of this disease, such as glandular tuberculosis, tuberculous joints, abscesses and sinuses, tuberculous peritonitis and other conditions are also benefited by such injections. If the desire is merely to raise the opsonic index for the tubercle bacillus, the treatment should begin with very small doses. Most writers advise 0.001 of a milligram, and at intervals of one week the dose can be gradually increased until the patient gets 0.01 of a milligram. Reactions should be avoided; or, if produced, the dose should be lessened. The opsonic index is rarely raised above 2, meaning that the leucocytes of the individual receiving the injections will take up just twice as many bacteria as the normal individual.

The opsonic treatment has also been successfully applied to the treatment of local inflammations produced by the pyogenic bacteria, and such conditions as boils, furuncles and even abscesses are improved and the opsonic index raised to two or three by injecting dead cultures of these bacteria. Doses of 500,000,000 have been given without any ill effects. Otitis media, and even streptococcic septicemia, have shown good results from this treatment.

In the treatment of gonorrheal arthritis the opsonic treatment has at times yielded its most brilliant results, as cases of long-standing disease have been improved by a vaccine made from the gonococcus. The doses have varied from 50 to 1000 million dead gonococci, and the index has varied from 1.5 to 2.

These are some of the conditions in which phagocytosis can be increased, and this treatment is certainly an approach toward a more exact and specific treatment of the infectious diseases.

We have made a number of vaccines at the Health Department, which have been used principally at the Mercy Hospital, in affiliation with the College of Physicians and Surgeons, and our results have been of some interest.

With the use of tuberculin we have treated two cases of tuberculous peritonitis, following a laparotomy, with flushing out of the abdominal cavity. We began with 1-1000 of a milligram of Koch's old tuberculin, and gradually increased at intervals of one week to

1-100 of an m.g. One of these cases left the hospital apparently cured after several months, but the other died in one month.

We have also used tuberculin in disease of the bones, with an increase in the opsonic index and apparently favorable results.

In the treatment of furunculosis caused by the staphylococcus albus we have obtained very favorable results, increasing the opsonic index up to 2 to 3, and improving the condition of the patient. In one case, in which there were 200-300 furuncles over the body, we thought we obtained our most favorable result, as the furuncles all disappeared after about two weeks of treatment, and the opsonic index was increased. In such cases injections of from 100,000,000 to 500,000,000 can be given at intervals of every five days. One case of cellulitis produced by the staphylococcus aureus was improved, and a similar case of general septicemia was not benefited, the disease ending in death.

INFECTION WITH THE BACILLUS PYOCYANEUS.

In one case of otitis media produced by this organism in which a profuse discharge had lasted for several months, the pus promptly dried up after several injections at intervals of five days of 50,000,000 dead bacilli. One case of mild general septicemia recovered after two injections of 50,000,000 bacteria, but another case of general pyemia eventually died. This was a case following appendicitis, in which there were numerous abscesses in the liver, and the clinicians expressed the belief that the life of the patient was prolonged by the treatment. A small section cut and stained from the liver after death showed that the leucocytes in the abscesses were crowded with bacilli, an evidence of active phagocytosis, and the patient's opsonic index was increased during the treatment.

PNEUMOCOCCUS INFECTION.

We have treated one case of pneumococcic endometritis following child birth, which ended in recovery.

GONORRHEAL ARTHRITIS.

One case of this disease has been treated by means of its special vaccine, which showed marked improvement in the condition of the joints.

In conclusion, we believe that the so-called opsonic treatment should be used in all of the infections mentioned above. There is universal testimony to the fact that moderate doses can do no harm, and there is a growing literature which indicates that they often do some good, and occasionally achieve brilliant results.

The clinical work described above was performed mainly by Dr. Rush B. Stevens, the present Resident Surgeon at the Mercy (City) Hospital, and Dr. Hanson of the University of Utah.

WILLIAM ROYAL STOKES.

Correspondence.

CO-EDUCATION IRRATIONAL FROM A PSYCHOLOGICAL STANDPOINT.

By *Eugene Lee Crutchfield, M.D.*,
Baltimore.

Fellow and Gold Medalist of the Society of Science, Letters and Art, London. Eng. :
Fellow of the American Academy of Medicine : Lecturer on Medical Terminology and History of Medicine in the Atlantic Medical College, etc.

IN the MARYLAND MEDICAL JOURNAL of December, 1908, the writer published a communication entitled "Co-Education a Bane of Society," in which the subject was considered from a moral and sociological standpoint. Now another aspect of the question will be brought to the reader's attention, viz., its psychological relations. Incidentally it may be remarked that the system of co-education appears to have lacked the elements of success from the fact that according to a recent number of *Munsey's Magazine* the Wesleyan University at Middletown, Conn., after an experience of 36 years, has abolished it.

While the writer heartily subscribes to the doctrine that the mental capacity of the two sexes is equal, he nevertheless believes that their endowments are along different lines. A moment's reflection will make it appear reasonable that this should be so. It is evident that man and woman are placed into this world with dissimilar (and often well-nigh antagonistic) functions to perform. The difference in their physical powers proves at once that their labors are not, or ought not to be, of the same nature. Concomitant with this dissimilarity of bodily capacity, it is rational to infer that their mental qualifications are unlike in character, though not unequal in degree. In fact, one appears to be the complement of the other. Unless the writer is greatly in error, the observations of educators substantiate this process of ratiocination. Experience in co-educational institutions has demonstrated the fact that as a rule boys excel in certain studies, while girls generally display a proficiency in acquiring a knowledge of other branches.

At the present day it is universally conceded that the object of education is not merely to make a storehouse of the mind, not simply to make it the repository of an indefinite number of facts. There are many peripatetic encyclopedias concerning whom the question might fairly be raised whether or not they are educated. Facts are stored away in their minds in a chaotic mass, but have their mental processes been so developed as to enable them to utilize the knowledge which they possess? The derivation of the word *education* illustrates this point. It comes from the Latin *educō* (*e* and *duco*). *I lead out or develop*. This is the primary object of education, to discover one's natural bent and to develop

to their full extent the innate endowments. Secondary and subsidiary to this is the acquisition of knowledge. First train the child to think.

In the ordinary course of events the boy and the girl will pursue entirely different and dissimilar vocations upon reaching adult life. The difference in their mental and physical endowments will naturally bring this about. Therefore, it is unreasonable to make either waste valuable time and energy upon studies for which no aptitude exists. It is also unjust, inasmuch as it makes the boy or the girl grow up undeveloped along the most important lines, and consequently unprepared for the vocations open to the respective sexes.

Not only will the man and the woman thus trained be unfit for their vocations, but they will also be unable to perform the duties of any avocations in which for pleasure or profit circumstances may render it desirable to engage. In every sphere the individual thus educated will be circumscribed, and have to labor under great disadvantages.

In this utilitarian age the financial outcome must always be considered. Therefore, from this standpoint, since co-education leaves the individual undeveloped, and renders him unprepared for satisfactorily pursuing life's vocation, the system must be condemned. The same course of reasoning applies likewise with equal force in the case of the girl. But this is not all. The deplorable lack of mental development and the diminished enjoyment of life arising from the inability to engage in certain avocations are matters of the utmost importance. It is inexplicable why this question is not considered and acted upon more rationally. It is desirable in every walk in life to adapt our interests to circumstances. The same principle should obtain in the matter of education. Endeavor to ascertain the natural propensities of each individual boy and girl and then develop them to their limit, at the same time giving such general training along all other lines as will prevent mental onesidedness. This, it seems to the writer, should be the underlying principle in all educational methods.

VITAL ECONOMY; OR, HOW TO CONSERVE YOUR STRENGTH. By John H. Clarke, M.D., New York. A. Wessels. 1909.

This octavo of 120 pages is a special American edition of a book which has obtained considerable favor in England. In it the author discusses, in a simple way, certain directions in which people of but moderate energy can conserve their life force. The special subjects discussed are the bath, fresh air, exercise, coffee, tea-drinking and worry. The style is very attractive, and many telling points are made at variance with popular beliefs.

MARYLAND MEDICAL JOURNAL

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BALTIMORE, FEBRUARY, 1910

THE PROOF OF THE PUDDING IS IN THE EATING.

Jonnesco's method of producing anesthesia for operative purposes has been so heralded as the long-sought-for ideal anesthetic that a word from one of its users cannot but be of interest to our readers. Aspinwall Judd, adjunct professor of surgery, New York Postgraduate Medical School and Hospital, relates his experience with this remedy on four cases in the *New York Medical Journal* (December 25, 1909). Some very pertinent, as well as suggestive, facts are brought out. Dr. Robert T. Morris operated on three of the cases and Dr. Jonnesco on one upon whom this method was tried. The writer of the article assisted at each and every operation. The four cases were non-selected, so that the method would have a fair and impartial trial. The first was a left-sided inguinal hernia; operation by Dr. Jonnesco. The operation proved very difficult and lasted 45 minutes, during the first 20 of which the patient complained of no pain, but thereafter, especially when traction was made on the cord, a considerable amount of pain and discomfort was evinced. The temperature, pulse or respiration was unaffected. Numbness persisted in lower limbs for 12 hours.

The second was an appendectomy on a 19-year-old Russian clerk by Dr. Morris, the duration of which was 19 minutes. The patient complained of no pain at any time. The temperature, pulse and respiration remained normal throughout the entire operation. Numbness persisted in the lower extremities for 48 hours. Symptoms of shock persisted somewhat prominently for 24 hours. Discharged cured on the seventh day.

The third was the removal of an osteoma about the size of a wild cherry from the forehead of an Italian, 19 years of age. Operation lasted 12 minutes and patient experienced severe shock, followed by respiratory failure and absolute collapse, necessitating artificial respiration. Respiratory excursions gradually returned

to normal character after a lapse of some 24 hours. One hour after operation the patient was wildly delirious; the delirium lasting two hours, and recurring at intervals. Left hospital on sixth day in normal condition.

The fourth was a herniotomy upon an Italian man, aged 50. Patient complained of no pain either at or after operation.

A careful scrutiny of this report will show that Jonnesco's method of intraspinal anesthesia is not without danger.

The report of these cases from an unprejudiced mind and a physician who has had actual experience with the method is indeed timely. He summarizes his conclusions of its usefulness thus:

"In analyzing these cases we note that the operation in the first case lasted more than 35 minutes, the time allotted by Professor Jonnesco in which to do efficient work under his method of anesthesia. The patient was excitable and expected pain, but without question a considerable portion of his pain was very real.

"In the second case, the operation lasted but nine minutes; the patient expected no pain; the tissues were very little pulled upon, and probably the same work could have been done under local anesthesia with an equally good result. He experienced some shock and more than usual post-operative disturbance.

"In the third case we certainly had a very narrow escape from respiratory failure, and only careful nursing and prompt and frequent stimulation subsequent to the operation averted a fatal issue. Note the delirium.

"The fourth patient was so extremely phlegmatic that the operation could have been done with practically no anesthesia. The cord was so far degenerated as probably to be insensitive under any condition.

"As for the analgesia obtained, this was absolute during the first 20 minutes in the first case and during the entire operation in the third, but in the latter case cerebation was as completely abolished within three minutes after the administration of the anesthesia as though ether had been used.

"While the use of stovaine and strychnine anesthesia in competent hands and in selected cases unquestionably has its advantages over the present forms of anesthesia, still, at the present time we are not convinced of its efficiency in general use. Administered in the upper portion of the spinal cord, if we can draw conclusions from the one case mentioned, its dangers far exceed those of the older methods."

HISTOLOGY OF THE UTERINE ENDOMETRIUM.

THE histology of the uterine endometrium has until recently been but imperfectly understood. According to late investigations (Gardner and Novak), the normal histological changes occupy definite and well-marked phases. These changes are readily recognized microscopically. It is necessary to bear in mind, however, that these stages are not always sharply defined, for some irritative influence other than the internal secretion of the ovary may force the uterine mucosa of the intermenstrual period to assume the characteristics of the menstrual. The chief lesson to be learned from these investigations is that so-called chronic endometritis is rarer than was supposed.

REPORT OF BOARD OF MEDICAL EXAMINERS OF MARYLAND.

QUESTIONS AT THE DECEMBER (1909) EXAMINATIONS.

ANATOMY.

1. Bone? Composition and structure.
2. Name bones with which the temporal articulates.
3. Describe the thoracic duct.
4. Name the ductless glands.
5. Describe any one ductless gland.
6. Make diagram of transverse section of thoracic spinal cord.
7. Give general plan of circulation.
8. Describe the ophthalmic nerve.
9. Describe the middle ear.
10. Origin, insertion, action and nerve supply of teres major and gracilis muscles.

SURGERY.

1. What is an abscess, an aneurism, and with what conditions may aneurism be confounded?
2. Define peritonitis.
3. Describe operation for ligation of subclavian in its third portion.
4. Describe tonsillectomy, and how would you arrest dangerous hemorrhage after this operation?
5. Name and describe the more common errors of refraction.
6. Define glaucoma, and describe its surgical treatment.
7. Where and when, if at all, should metallic sutures be used, and why?
8. Give symptoms, signs, diagnosis and surgical treatment (operative and non-operative) of tubercular coxitis (hip joint).
9. Name several local anesthetics and mode of application.
10. Cholecystotomy: Indication, limitations, technique.

PATHOLOGY.

1. Define (a) calcification, (b) neuroma and angioma, (c) a retention cyst. (d) What are the degenerative changes of arteries? (e) What is osteo-malacia?
2. How does sarcoma differ histologically from carcinoma?
3. What pathologic changes are found in Addison's disease?
4. Give pathology of tabes dorsalis.
5. Describe pathologic change that takes

place in the liver from chronic interstitial hepatitis or atrophic cirrhosis.

6. What pathologic changes occur in acute lobar pneumonia?
7. What is diplococcus? Name two pathogenic diplococci.
8. Define (a) germicide, (b) antiseptic, (c) asepsis, (d) sterile, (e) disinfectant.
9. What is essential to the life of bacteria?
10. What special culture medium is required for the growth of gonococcus?

OBSTETRICS.

1. What are the factors concerned in normal menstruation? Under what pathological condition may menstruation be absent?
2. How is external palpation applied in the diagnosis of the position of the fetus?
3. What is puerperal eclampsia? Describe the prophylaxis and give treatment.
4. Give the causes, diagnosis and treatment of prolapse of the cord.
5. Give the causes, diagnosis, mechanism and management of a face presentation.
6. Mention all the structures divided in complete laceration of the perineum, and describe an operation for their restoration.
7. Give the pathological anatomy, symptoms, diagnosis and treatment of membranous dysmenorrhea.
8. Give reasons for the shortening of the round ligaments. Describe the operation.
9. Describe the structures and development of a dermoid cyst of the ovary.
10. Give the causes of icterus of the newborn.

PRACTICE.

1. Define (a) epidemic parotitis, (b) difference between endemic and epidemic diseases, (c) dysphagia, and name some diseases in which it occurs; (d) Koplik's sign and Kernig's sign. In what diseases do they occur?
2. What is (a) percussion, (b) inspiration, (c) mensuration, (d) palpation, (e) auscultation, (f) succussion, (g) aegophony.
3. Give differential diagnosis between membranous and spasmodic croup, and give treatment of each.
4. Give differential diagnosis between varioloid and varicella.

5. Give differential diagnosis between hysteria and epilepsy.

6. Give symptoms of Graves' or Basedow's disease.

7. Give causes and symptoms of ascites, and indicate how to recognize by what disease it is produced.

8. Give treatment of erysipelas.

9. Give treatment of diabetes mellitus.

10. Describe symptoms of herpes zoster and its treatment.

CHEMISTRY.

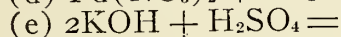
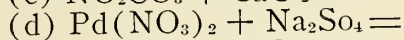
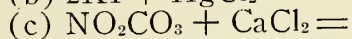
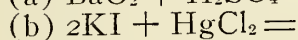
1. Define (a) diffusion, (b) dialysis, (c) combustion, (d) reagents, (e) oxydation, and give an illustration of each.

2. (a) What is the reaction of normal gastric juice, (b) and to what is it due?

3. (a) Give properties, (b) chemical formula and (c) uses of permanganate of potash.

4. Mention one chemical antidote for each of the following: (a) Phenol, (b) arsenious oxide, (c) sulphuric acid, (d) mercuric chloride, (e) oxalic acid.

5. Complete the following equations:



6. Describe in detail the examination of a sample of urine for the detection of sugar, albumen and bile.

7. Give (a) chemical formula, (b) properties (c) and uses of iodoform.

8. Give a chemical classification of food-stuffs, with an example of each.

9. Under what circumstances are the syllables mono, di, tri, tetra and penta used in chemical nomenclature? Give examples.

10. Describe "Marsh's" test for arsenic.

MATERIA MEDICA.

1. How is opium obtained? (a) What per cent. of morphia should the official powdered opium yield? (b) Name two alkaloids of opium and give doses.

2. Give the official name and composition of (a) Fowler's solution, (b) Donovan's solution.

3. Name five official preparations of mercury.

4. State the dose of infusion of digitalis, fluid extract of ergot, oleum terebinthinæ, sodium salicylate and tincture opii deodorati.

5. Give the official name and dose of (a) Epsom salts, (b) Rochelle salts, (c) Glauber salts.

6. What is incompatibility in medicine, and what are the different kinds of incompatibles?

7. Would you write potassium chlorate and

tannin in the same prescription? Give reasons for your answer.

8. Define narcotics, anesthetics and sedatives, and give an example of each.

9. Name the four principal alkaloids of cinchona.

10. Mention the three principal salts of potassium used in medicine, and give dose of each.

THERAPEUTICS.

1. Name two respiratory stimulants and two vasomotor depressants. Give doses.

2. Describe and give the indications for the use of cardiac sedatives, with an example.

3. For what purpose is diaphoresis produced? Name three diaphoretics.

4. By what methods do antipyretics act?

5. Define anthelmintics, and name some remedies of this class.

6. Explain how antitoxin produces immunity and effects cure.

7. What therapeutic uses has chloroform other than as an anesthetic?

8. What is cumulative action? Name one drug that has this tendency, and give symptoms of such action.

9. What is the important alkaloid of erythroxyton, and what is its principal therapeutic use?

10. What are the therapeutic uses of the preparations of bismuth?

PHYSIOLOGY.

1. (a) Define human physiology. (b) Define physiological leukocytosis and mention some conditions in which found. (c) Give normal blood pressure.

2. State what you know of the composition and character of urine, and mention the most frequent abnormal constituents.

3. (a) What are the sources of oxygen and carbonic-acid gas in the system? (b) What is the effect of each upon the blood?

4. What is meant by absorption and nutrition?

5. Where in the body is each of the following found, and what is the function of each: Pepsin, trypsin, glycogen, ptyalin and synovia?

6. Describe the normal heart sounds and factors producing each.

7. Describe briefly the functions of the pneumogastric nerve.

8. Give the functions of the skin, and describe briefly how each function is performed.

9. Lymph: Origin, description, composition and functions.

10. (a) Describe the normal pulse, and give the average rate during infancy, youth and old age. (b) What is the normal ratio of the pulse to respiration?

Summary of Results of Examination Held by the Board of Medical Examiners of Maryland, December 14, 15, 16 and 17, 1909.

No.	COLLEGE OF GRADUATION.	Anatomy.....	Surgery.....	Pathology.....	Obstetrics.....	Practice.....	Chemistry.....	Materia Medica.	Therapeutics....	Physiology.....	Total.....	Average.....
1	Baltimore Medical, '06.....	..	..	84	..	..	..	..	..	75	...	..
2	George Washington University, '07.....	37	..	75	..	..	60	..	..	..	...	..
3	University of South, '09.....	81	..	..	..	..	..	..	..	..	...	..
4	Baltimore Medical, '09.....	61	..	75	..	..	61	78	..	..	...	..
5	Baltimore Medical, '09.....	75	95	84	83	77	75	92	95	87	763	85
6	McGill University, '09.....	91	75	87	90	78	75	85	79	75	735	82
7	Maryland Medical, '08.....	36	..	..	..	..	75	..	..	..	...	..
8	University of Pennsylvania, '08.....	81	90	91	95	84	87	90	75	90	783	87
9	Baltimore Medical, '09.....	54	..	60	..	75	65	..	..	75	...	..
10	University of Michigan, '98.....	80	95	85	87	83	82	75	81	87	755	84
11	University of Maryland.....	75	..	..	..	..	67	77	..	90	...	..
12	University of Maryland, '09.....	75	80	90	84	71	78	79	80	87	724	80
13	Louisville Medical College, '08.....	23	70	59	66	62	46	66	75	75	542	60
14	George Washington University.....	76	..	..	..	..	75	90	..	88	...	..
15	Howard University, '08.....	75	65	87	80	77	69	80	82	80	695	77
16	Baltimore Medical.....	75	..	..	..	..	79	96	..	75	...	..
17	University of Virginia, '05.....	83	94	87	78	80	76	86	84	92	760	84
18	Howard University, '08.....	65	60	57	68	62	75	89	77	80	633	70
19	Baltimore Medical, '09.....	57	85	64	84	75	64	67	75	75	646	72
20	College of Physicians and Surgeons, Balto., '09	79	90	84	90	75	75	93	69	96	751	83
21	College of Physicians and Surgeons, Balto., '09	..	..	..	..	..	..	..	..	..	...	..
22	College of Physicians and Surgeons, Balto., '09	..	..	..	..	..	..	..	..	..	...	..
23	Maryland Medical College, '06.....	75	..	76	..	..	75	..	..	..	...	..
24	Maryland Medical, '09.....	30	..	85	84	82	50	..	95	..	...	..
25	Baltimore Medical, '06.....	..	..	..	..	..	..	..	..	..	...	..
26	University of Maryland.....	86	..	..	..	..	76	95	..	96	...	..
27	University of Maryland, '09.....	67	80	80	75	75	75	82	78	80	692	77
28	University Med., Richmond, '09.....	..	..	..	..	..	..	..	..	..	...	..
29	University of Maryland, '08.....	75	90	60	90	65	70	87	84	85	706	77
30	College of Physicians and Surgeons, Balto., '04	..	..	75	..	75	75	89	..	..	...	..
31	University of Maryland, '09.....	52	..	..	88	69	75	79	65	..	...	..
32	University of Pennsylvania, '09.....	..	..	..	80	..	76	..	..	75	...	..
33	University of Pennsylvania, '08.....	75	90	79	72	78	69	90	82	87	722	80
34	University of Maryland, '08.....	..	..	..	..	75	87	..	..	..	...	..
35	University of South, '08.....	57	..	..	..	..	..	..	..	..	...	..
36	University of Maryland.....	87	..	..	..	..	86	93	..	90	...	..
37	Johns Hopkins, '09.....	91	90	100	95	91	87	96	100	90	840	93
38	University of Maryland.....	75	..	..	..	..	65	85	..	92	...	..
39	Maryland Medical, '09.....	63	..	83	86	69	66	..	..	..	...	..
40	University of Maryland, '09.....	88	90	87	68	75	68	95	85	70	726	81
41	University of Maryland, '09.....	74	44	68	85	75	86	85	78	80	675	75
42	College of Physicians and Surgeons, Balto.....	87	..	..	..	..	75	91	..	92	...	..
43	Jefferson Medical, '09.....	75	90	84	82	70	60	88	86	85	720	80
44	University of Maryland, '09.....	80	95	89	99	91	79	90	98	90	811	90
45	University of Maryland.....	67	..	..	..	..	77	92	..	70	...	..
46	Maryland Medical, '09.....	46	58	62	..	61	78	..	..	..	...	..
47	College of Physicians and Surgeons, Balto.....	75	..	..	..	..	77	94	..	80	...	..
48	College of Physicians and Surgeons, Balto., '08	84	88	83	94	75	75	92	85	87	763	85
49	College of Physicians and Surgeons, Balto., '08	90	85	88	85	83	81	97	95	87	791	88
50	Howard University, '09.....	56	85	82	84	77	75	95	87	70	711	79
51	College of Physicians and Surgeons, Balto., '09	..	..	..	..	..	..	..	..	..	...	..
52	University of Maryland, '07.....	..	..	75	..	..	75	..	..	..	...	..
53	Temple University, '09.....	67	75	70	87	69	75	90	89	75	697	77
54	Jefferson Medical, '09.....	77	90	80	73	75	75	92	97	80	739	82
55	Johns Hopkins, '07.....	..	..	78	..	..	75	..	80	..	...	..
56	University of Maryland, '09.....	61	98	77	83	58	75	79	90	90	711	79

In the above summary an average of 75 is required of those participating in the examination for the first time in order to secure a license. Those who have failed are eligible to re-examination at the expiration of six months. They are then obliged to receive a rating of 75 in each branch in which they are re-examined before license can be issued. Under the Maryland laws, students who, at the end of their second year, have successfully passed their college examination in Anatomy, Chemistry, Materia Medica and Physiology, are entitled to examination by the Board of Medical Examiners in these branches. The ratings made by these students in the examination known as the "second-year examination" are carried forward and made part of the final examination, when an average of 75 must be obtained to secure a license. We trust that this statement will make clear the apparently incomplete examination of certain participants.

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Medical Items.

At the meeting of the Prince George County Medical Society held in Washington on January 8 the following officers were installed: President, G. W. Latimer, M.D., Hyattsville; Vice-President, Harry Nally, M.D., Mt. Rainer; Secretary, H. B. McDonnell, College Park; A. O. Etienne, Berwyn; Delegate, C. A. Fox, M.D., Beltsville, and Alternate, L. O. Griffith, M.D., Upper Marlboro.

THE engagement is announced of Miss Adele Kempner to Samuel Wolman, M.D., Johns Hopkins University Medical Department, 1906, both of Baltimore.

PIERCE BUTLER WILSON, M.D., Baltimore University School of Medicine, '94, of 2015 Wilkens avenue, Baltimore, has returned from an extended visit to the hospitals of England and France, and has resumed his practice.

C. HAMPSON JONES, M.D., of Baltimore, was severely injured by a fall on the ice January 5, but is now able to be out.

R. A. SHANKWILER, M.D., has resigned as assistant resident physician at Eudowood Sanitarium, and will accept a similar position at the Antituberculosis Association Sanitarium of Louisville, Ky. He will be succeeded at Eudowood by F. H. Vinup, M.D.

THE health report of Baltimore county for the month of December shows 131 deaths. Bright's disease and pneumonia lead as the agents of death, claiming 13 and 15 victims, respectively. Dr. Gorsuch reports five cases of diphtheria and 19 of whooping cough.

THE reports of the different institutions of the city and State have been submitted.

DR. J. CLEMENT CLARK of Springfield calls attention to the fact that insanity is on the increase in Maryland, and states that the present population of Springfield is more than its normal capacity.

THE managers of Eudowood ask for a cottage for children.

THE Northeastern Dispensary states that it has filled 25,964 prescriptions in 1909, and that it has treated 8216 patients.

THE Jewish Home for Consumptives reports a very successful year.

THE Hebrew Hospital report shows the need of a larger building, there having been over nine times as many patients in the hospital in 1909 as in 1902.

THIRTY candidates were licensed by the

Board of Medical Examiners as a result of the December examinations.

DR. GEORGE WELLS of Annapolis is ill at his home with pneumonia.

RICHARD GORDON SIMMONS, M.D., Jefferson Medical College, '89, was appointed as coroner of Roanoke, Va., January 3.

THE Constitution and By-Laws for the proposed hospital in South Baltimore have been accepted by the directors. The plans now being complete, it is intended to collect subscriptions to the amount of \$10,000, the hospital to be called the South Baltimore General Hospital, and to contain 100 beds.

DEATHS.

PETER BROUGH MONTGOMERY, M.D., Bellevue Hospital Medical College, '86, of Chambersburg, Pa., at Buena Vista, Fla., January 7; aged 47 years.

JULIUS O. DORSEY, M.D., University of Maryland, '63, at his home in Broome's Island, Md., January 9, of congestion of the brain, aged 67 years.

WILLIAM L. NOLAN, M.D., New York University Medical College, '90, at Nolan Hospital, Salem, Va., of heart disease, January 2, aged 44 years.

JAMES ANTHONY BURROUGHS, M.D., Louisville Medical College, '82, president of the North Carolina State Medical Society, at his home in Asheville, N. C., December 29, aged 53 years.

EDMUND STRACHAN PENDLETON, M.D., Jefferson Medical College, '54, at his home in Iron Gate, Va., December 28, aged 76 years.

HOWSON WHITE COLE, M.D., Jefferson Medical College, '54, at his home in Danville, Va., January 8, aged 80 years.

JOSEPH H. CHANDLER, M.D., Jefferson Medical College, '60, at his home in Wilmington, Del., aged 70 years.

MARRIAGES.

HENRY JANNEY WALTON, M.D., Atlantic Medical College, '02, and Baltimore Medical College, '06, to Miss Helen Alford Smith, both of Baltimore, January 18.

SAMUEL HARVEY IAMS, M.D., University of Pennsylvania, '05, of Waynesboro, Pa., to Miss Elizabeth Stribling Rouse of Baltimore, January 29.

BENJAMIN CISSEL PERRY, M.D., Baltimore Medical College, '06, of Urbana, Md., to Miss Minnie Nash of Prospect Hill, Md., January 26.

WILLIAM JAMES CORSE, M.D., University of Maryland, '87, of Gardenville, Md., to Miss Ethel Gordy of Baltimore, January 26.

PNEUMONIA

Pneumonia is Practically An Omnipresent Disease

IN this country, its death rate exceeds that of any other disease—tuberculosis not excepted. ¶ Its death rate is gradually increasing. ¶ Its victims run into the hundreds of thousands annually. ¶ It is so destructive of human life, Osler has denominated it "*The Captain of the Men of Death.*"

There is no specific medicinal treatment for it—only symptomatic. As to the efficacy of the conventional treatment, the above facts show it to be far from satisfactory.

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Book Reviews.

A TEXTBOOK OF PHYSIOLOGY FOR MEDICAL STUDENTS AND PHYSICIANS. By William H. Howell, Ph.D., M.D., LL.D., Professor of Physiology in the Johns Hopkins University, Baltimore. Third edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. Baltimore: Medical and Standard Book Co. Cloth, \$4 net; half Morocco, \$5.50 net. 1909.

The author has revised his book most thoroughly, with the particular view of simplification. It has as its basic quality the practicalization of physiology, the application of physiology to disease processes. As in the former volumes, he tells his story in simple, clear English, this edition differing from the others in that much of the subject matter has been rewritten, especially that part of physiology which has to deal with physical physiology, in contradistinction to chemical physiology, in both branches of which many new facts have been added to our knowledge in the last few years. The student seeking a grounding in the fundamentals of physiology will be completely satisfied and accommodated by this book. Of especial interest is the physiology of respiration, which includes a historical sketch, anatomy of the organs of respiration, the pressure conditions of the lungs and thorax and their influences upon the circulation and the influence of various conditions, such as work, low and high barometric pressures, upon the respiration. Modified respiratory movements receive due attention, both as regards character and causes. The latest word upon the composition of food and action of enzymes are incorporated in the text. Much attention is given to the physiology of the liver and the spleen. Of the latter he says: "Much has been said and written about the spleen, but as yet its distinctive function or functions remain undiscovered." The physiology of the organs of circulation of the blood and lymph is made to accord with modern ideas, and is thoroughly illustrated.

Without necessarily complicating an exceedingly complicated subject, Howell has put in readable form the basic knowledge of physiology as it exists today. The book is an ideal textbook for students, and should in schools supplant the large and more pretentious textbooks.

A TEXTBOOK ON THE PRACTICE OF GYNECOLOGY FOR PRACTITIONERS AND STUDENTS. By William Easterly Ashton, M.D., LL.D.; Fellow of the American Gynecological Society; Professor of Gynecology in the Medico-Chirurgical College, and Gynecologist to the Medico-Chirurgical Hospital, Philadelphia; formerly Lecturer on Gynecology in the Jefferson Medical College, Philadelphia; one of the founders of the Congrès International de Gynécologie et D'Obstétrique; Member of the American Medical Association, etc. Fourth edition. Revised and enlarged, with 1058 new line drawings, illustrating the text by John V. Alteneder. Philadelphia and London: W. B. Saunders Company. Cloth, \$6.50 net; half Morocco, \$8 net. 1909.

Every book has its predominating feature; one inclines to diagnosis, another to treatment, another to a cursory review of the matter in hand, and still another to operative detail, and so on along the line. In Ashton's "Gynecology" there is a commingling of

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the above features. He not only imparts the information of what should be done, but also how to do it. No step is so insignificant as to be slurred; he presumes nothing to the knowledge of his reader. In order to carry out his plan of presentation of his subject he has profusely illustrated his text with more than a thousand original line drawings. The fact that in less than two years three editions have been exhausted and a fourth issued, signifies that the reading public was ripe for such an innovation in medical book-making. Writers upon surgery hitherto have relied too much upon the general information of their readers, supposing them to be familiar with the minor details. In this book nothing is taken for granted; what is to be done is fully described, and, above all, the necessary technique for its accomplishment. We do not hesitate to state that this book marks an epoch in book-making. The book is evidently based upon the wide experience of the author, as every page bears the earmarks of a wide personal experience. Truly, the plan is a distinct advance over the older methods. The excellency of the style greatly enhances its value. An especially valuable feature of the work will be found in the illustrations, which add materially to the usefulness of the volume. Both the medical and surgical aspects of gynecologic diseases are thoroughly described. Chapters not usually found in gynecologies are: The X-rays in Gynecology, Hydrotherapy, Constipation, Diet, Indoor Exercise, Saline Injections, etc. Besides the above-mentioned chapters the usual diseases peculiar to womanhood are comprehensively discussed. The chapters on cystitis, peritonitis, tuberculosis of the genital organs and ectopic pregnancy are especially full and interesting, and comply with the modern notions upon those subjects. The book is modern and up to date, and we take great pleasure in commending it to the general practitioner and student as a reference and textbook, respectively.

PRACTICE OF MEDICINE. By James Anders, M.D., Ph.D., LL.D., Professor of Medicine and Clinical Medicine at the Medico-Chirurgical College; Physician to the Medico-Chirurgical Hospital; Consulting Physician to the Jewish Hospital and to the Widener Home for Crippled Children; formerly Physician to the Philadelphia and the Protestant Episcopal Hospitals, Philadelphia; Officer de l'Instruction Publique. Illustrated. One thousand three hundred and twenty-six pages. Ninth edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. Baltimore: Medical and Standard Book Co. Cloth, \$5.50 net; half Morocco, \$7. 1909.

Considered from every viewpoint—etiology, diagnosis, treatment, perspicuity and easy style—the ninth edition of Anders' "Practice of Medicine" is, in our consideration, one of the very best single-volume textbooks on internal medicine, and should, without doubt, be as popular with the profession and students as any of its predecessors. Its contents embrace about the same category of medical affections as its competitors. In our opinion, the section on neurology could well be dispensed with, as the subjects are better considered in books on diseases of the nervous system. The author certainly errs in his statement, "Though the view cannot be unreservedly accepted, exophthalmic goitre is probably of thyroid origin," for if anything is probable, Graves' disease has certainly been proven to be a hyperthyroidism, and the author wastes paper, time and energy by enumerating the following theories: (1) That



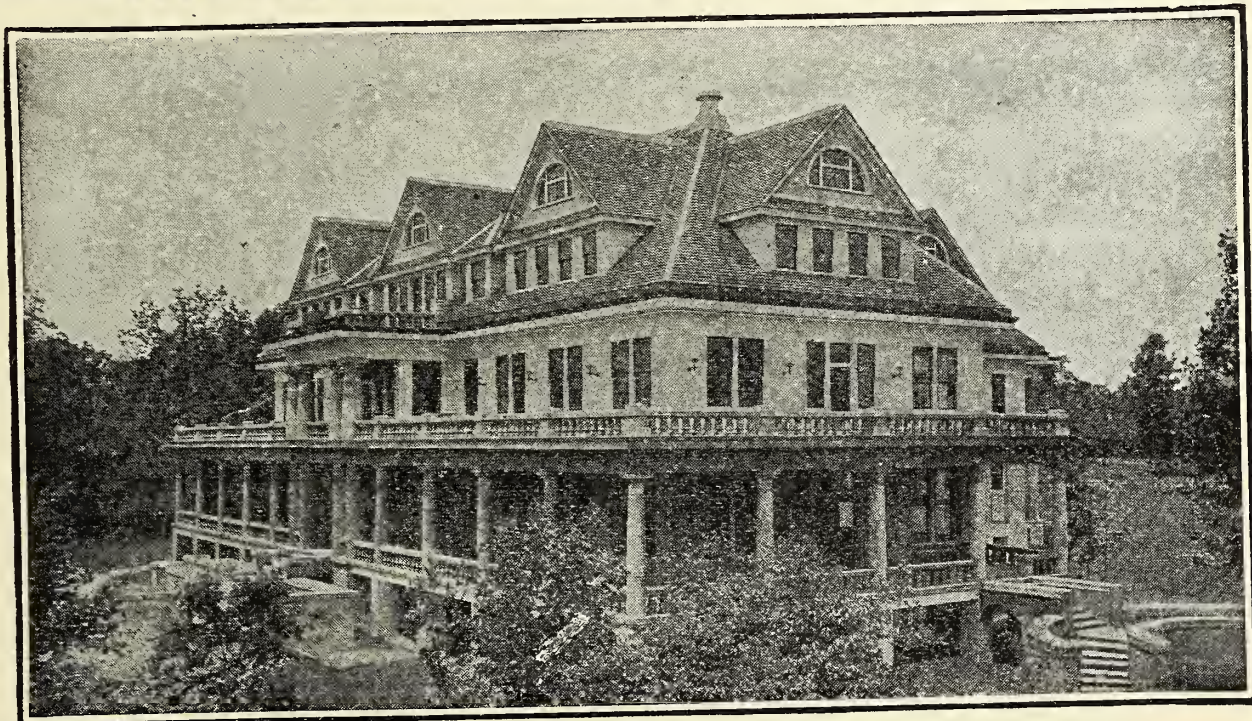
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it is due to disturbed enervation; (2) that the seat of the disease resides in the medulla oblongata; (3) that it is an affection of the sympathetic nerves; (4) that it is a disease of the central nervous system, associated with chronic intoxication. The book should, as formerly, commend itself to students and general practitioners. It is modern, up to date, well written, and covers a variety of subjects.

The ninth edition is a thorough revision of its predecessors, the most important practical advances since the date of the last edition having been incorporated, and the obsolete portion of the text eliminated. Pre-eminent amongst the newly-written matter are the following: Flexner's serum for cerebrospinal meningitis, Wasserman's work, Tucker's magnesium-sulphate treatment of erysipelas, opsonin test for tuberculosis, Wright's modification of Romanowski's stain for malarial parasites, Grocco's sign and its significance, Kelling's method for the hemolytic serum test in gastric carcinoma, new theories on causes of uremia and a number of other interesting subjects. In our opinion, this work is an ideal textbook for students.

THE TREATMENT AND PREVENTION OF ABORTION. By Frederick J. Taussig, Lecturer in Gynecology, Medical Department, Washington University. St. Louis: C. V. Mosby Company. Cloth. Price \$2 net. 1910.

The appearance of the above is, indeed, timely, as textbooks give the general practitioner very little information upon this subject—a very vital one to this class of physicians who treat the vast majority of abortions. Chapter I deals with the frequency of abortion, an occurrence of greater frequency than one would imagine at first thought, being as much as 1-10 full-term deliveries, and apparently on the increase in the United States. In Chapter II the anatomy of pregnancy is thoroughly and entertainingly discussed. Chapter III has as its text the pathology of abortion, which, according to the author, depends upon the state of the anatomical development. Some eight pages are devoted to the etiology, and 25 to symptoms, clinical course and diagnosis. As regards the prognosis, the author is of the opinion that a large number of deaths occur either directly or indirectly as the result of abortion, which fact influenced him in writing this book, as he is firmly of the opinion that the general practitioner should be better instructed in meeting threatened or completed abortion. In those cases having the abortion habit, he lays great stress upon prophylactic measures, both before and after conception. Some space is devoted to criminal abortion and the remedy. The prevention of threatened abortion is comprehensively discussed. The remainder of the book, more than 100 pages, is devoted to operative indications, operative technique, complications and their treatment (hemorrhage, retained placenta, sepsis and perforation).

Dr. Taussig's book will be found invaluable to any physician doing obstetrics.

A PRACTICAL STUDY OF MALARIA. By William H. Deaderick, M.D. Philadelphia: W. B. Saunders Company. 1909.

The author states in the preface of the book that this work is written by one engaged in private practice largely in country districts, in the home of the severer forms of the disease.

At the outset we are struck with the author's style, which, while

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Single Syringes, each, \$1.25.

Syringe A contains 50 million killed bacteria.

"	B	"	100	"	"	"
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Dose, 10 to 50 millions, every four to eight hours, progressively increased.

For the treatment of indigent cases, we will supply Pneumo-Bacterin without charge, with the understanding that full reports will be made to State or County Medical Societies or to the Medical Press whether the results obtained are favorable or otherwise. Our interest lies principally in making it possible for the medical profession to prove or disprove the value of the bacterin treatment of pneumonia.

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1. **Early diagnosis.** Do not wait for appearance of rusty sputum.
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not that which we are accustomed to note in the more scientific works, is extremely interesting and holds the reader's attention throughout the whole book of nearly 400 pages. The introduction deals largely with the history of the disease in question, and is traced from remote antiquity to the epoch-making work of the most recent investigators.

Under the chapter on etiology we are given a very comprehensive study of the malarial-bearing mosquito. The numerous photographs and diagrams elucidate the subject clearly and marks it as probably the most attractive chapter of the book. The parthenogenetic cycle of the parasite is clearly set forth both in the description and diagrams.

The chapter on clinical history of the disease is largely drawn from the author's own cases, and the account of hemoglobinuric fever, while brief, well describes the condition.

The diagnosis of the disease is considered from the symptoms, from the examination of the blood and from the effects of quinine upon the symptoms. As to the examination of the blood, the author quotes the statement from Mason: "There are more mistakes made in the diagnosis of malaria with the microscope than perhaps over any other similar study; on the other hand, if properly employed it may give valuable information, leading perhaps to the saving of life."

The book concludes with a very able statement of the present-day methods of treatment. The reviewer thinks the volume is a valuable addition to the literature on the subject, and will well repay a careful study.

INTERNATIONAL CLINICS, Vol. IV, Nineteenth Series, 1909. Philadelphia: J. B. Lippincott Company. 1909.

The volume of this well-known quarterly before us marks an era in medicine, having as its frontispiece photographs taken in colors of a patient and of a pathological specimen, and in the articles which they illustrate a microscopic photograph, taken in colors, of a pathological section. The immense advance in pathological record marked by this new conservative device is shown by comparison with colorless photographs of the same specimens. This admirable work is presented by Dr. C. B. Longenecker of Philadelphia in connection with an article in which he describes minutely the methods of color photography applicable to medical work.

Among other articles which impress us we may mention one by Dr. Simon Flexner, in which he gives a favorable review of the results of serum treatment for meningitis.

There is also a careful review by Emile Sergent, M.D., of Paris on the symptoms of acute and chronic adrenal insufficiency.

Dr. Charles G. Cumston of Boston discusses the clinical symptoms of epiploitis (inflammation of omentum). Dr. K. J. Rectenwald of Pittsburg describes, perhaps with excessive enthusiasm, a very remarkable method which he has twice successfully tried of removing entire the tightly adherent placenta by slow traction, during several days, on the cord with a bandage and a half-brick. It is certainly a method that carelessly applied might end in disaster.

Dr. Thomas S. Cullen of Baltimore has an article on early diagnosis of uterine cancer, and Dr. Louis Hamman of the Johns Hopkins Phipps Dispensary, a conservative article favoring the use of tuberculin in treatment in minimum doses.

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THE EBB AND FLOW OF HYPNOTISM SINCE 1660.

By Howard A. Kelly, M.D., F.R.C.S., Edin.,
Baltimore.

Professor of Gynecology in the Johns Hopkins University.

I AM not going to look at psychotherapy on its *medical* side, but rather to show the ebb and flow under its varying titles of Chi-rothesy, Mesmerism, Electro-biology, Braidism, Electro-psychology, Metalotherapy, Pathetism, Animal Magnetism, Hypnotism, Faith Cure, Christian Science and Psychotherapy, and as practiced by the "learned laity" and the hesitating or sometimes severely condemned medical man.



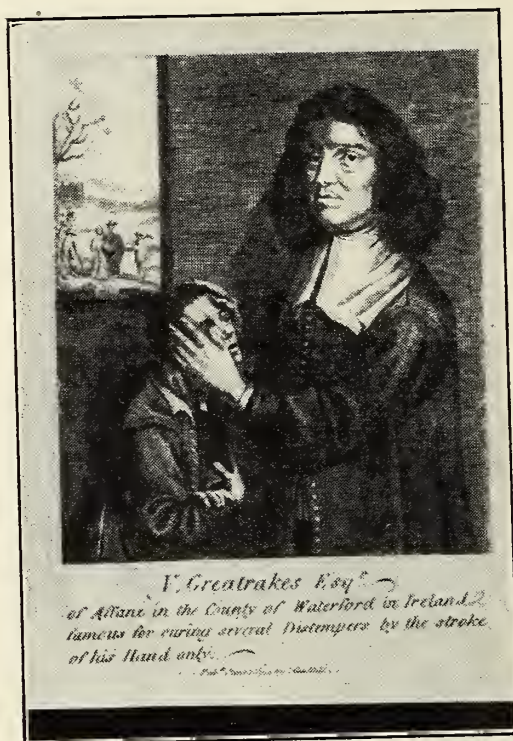
ROBERT FLUDD, M.D.
(1547—1637)

De Supernaturali, Naturali, Praeternaturali et Contranaturali (1619). Magnes sive de Arte Magnetica (1643). Kircher.

Fludd, of course, was dead before the date I have given of 1660, but he ought to be mentioned as one of three writers and believers in the curative powers of magnetism, namely, Van Helmont and Kircher.

VALENTINE GREATRAKES.

A warm eulogy of Mesmer's best known forerunner, Valentine Greatrakes, is found in a little pamphlet written by one Dr. Stubbe in 1666,[†] who tells that Greatrakes was born in 1628 at Affane, in Ireland, and served in Cromwell's forces under the Earl of Orrery, afterwards living as a private gentleman on his own estate. About 1660 he became convinced he had—and proved he had—the gift of curing the king's evil. A second impulse gave him the power of curing ague; a third, of celestial aura, endued him, under cer-



VALENTINE GREATRAKES

of Waterford, Ireland, "famous for curing several Distempers by the stroke of the Hand only."

tain conditions, with power over all disease. His theory of disease was the scriptural one of a devil to be expelled. A touch, a look, sometimes the healer rubbing himself or the patient, and the pain fled, as clearly shown in the case of Mrs. Wallig.

"Mrs. Wallig, a schoolmistress, dwelling upon Malvern Hill, fell into a most horrid fit of the Falling-sickness; she was exceedingly violent and convulsive, with so much impetuosity as if her limbs had then been rending in sunder. I never saw any Hysterical Paroxysms half so dreadful; all her joynts seemed to be cramped and sometimes distorted as if she had been upon the wrack. Mr.

[†]The miraculous Conformist, or an account of severall marvailous cures performed by the stroaking of the hands of Mr. Valentine Greatarick, Oxford, 1660.—H. Stubbe.

Greatrakes, by stroaking her breast, soon restored her to such Sensibility as that she was able to speak and direct him in the place whither her pain shifted, which it often did with inexpressible agility. She often gave such shrieks as if her heart had been bursting in sunder, and sometimes in her nose that she seemed ready to tear it off. Mr. Greatrakes thought her possessed of the Devil, but her acquaintance testified that she had been of unblameable life and conversation and that her education hath been more liberal than is ordinarily found in that Sex. For to a Gentleman standing by Mr. Greatrakes (a good while curing her Fit) and saying to him, '*Credo quod obsessa sit,*' she suddenly and brusquely replied, '*Sic credo, sic credo, at non diabolo, sed vento.*' In fine, she continued under his Hand between four hours and was at length freed, her pains being chased by him out of her Toes."

Greatrakes' fame soon ate up his leisure. From 6 in the morning till night patients crowded to him even from England. The Earl of Orrery persuaded him to go to Warwick, England, to cure the Viscountess Conway of chronic headache, which Greatrakes failed to do, but remained at the castle as a guest, the gentry of Warwick flocking to him daily. Lord Arlington commanded him to appear at Court, where this healer of gallant bearing, handsome face, musical voice, and witty withal, soon became the fashion. It was said a subtle aura of delicious odor came from his body and helped the cure. He took no fee, and described his power as entirely God-given. John Cordy Jefferson* (who does not give his authority) says Greatrakes did take fees, was not strictly moral, and finally had to return to private life in Ireland.

DR. ANTOINE MESMER (GERMANY, 1734-1815).

Mesmer, one of our faculty, was first attracted to the science which bears his name by the healing with magnets of one Père Hell, a Jesuit, but was convinced the magnets were superfluous. When in Paris, 1778, he instituted his famous mesmeric salon, and was received with transports by a crowd of rich, superficial patients.

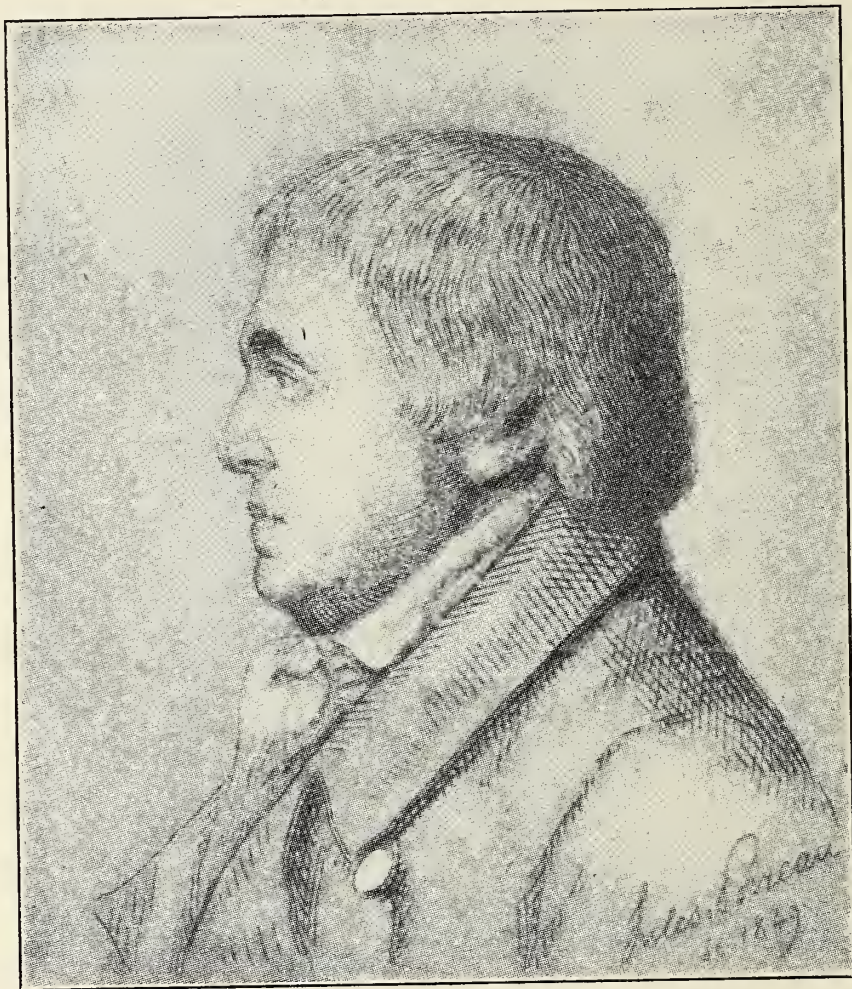
An oak tub, four or five feet in diameter and one foot deep, was closed by a lid made in two pieces and encased in another tub or bucket.† A number of bottles were laid in convergent rows, the neck of each bottle turned toward the center. Other bottles, filled with magnetized water, tightly corked down, were laid in divergent rows, with their necks turned outward. Several rows were thus piled up, and the apparatus pronounced to be at high pressure. The tub was filled with water, to which was sometimes added powdered glass and iron filings. A long rope was also fastened to a ring in the lid, and this the patients placed loosely round their limbs. No diseases offensive to the sight were treated, such as sores, wens or deformities. The patients then drew near to each other, touching hands, arms, knees or feet. The handsomest,

*A Book About Doctors.—J. C. Jeaffreson (Lon., 1861).

†Cournelles' Hypnotism. Biographie Med., Paris, 1855.

youngest and most robust magnetizers held also an iron rod, with which they touched the dilatory or stubborn patients. The rods and ropes had all undergone a preparation, and in a very short space of time the patients felt the magnetic influence.†

There was also a padded room, where patients beat themselves against the walls to excite a "crise," to aid the magnetism. Mesmer, dressed in a lilac coat, walked about, halting before the most excited, staring into their eyes and holding both their hands to establish "communication."



FRANZ A. MESMER.

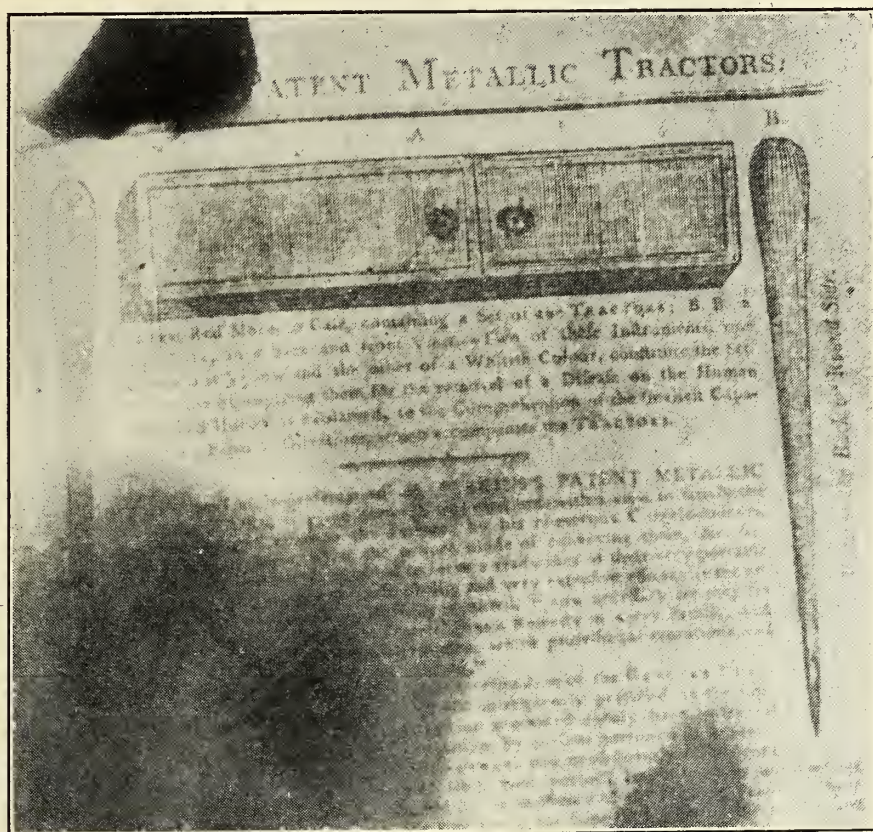
He was also induced to hypnotize a tree in Paris, thousands coming and fastening themselves to it to effect a cure.

In 1784, provoked by his successes, the Academy was stirred to inquiry, and the Royal Society of Medicine threatened Dr. d'Eslon with expulsion for countenancing it. "But," he said, "if imagination cures, why not use imagination?" Franklin was also on the commission and saw its possibilities. The inquiry and further publicity gave the death-blow to mesmerism and its author. He went to England; then returned to Germany and died, ignored, in 1815.

†Hypnotism. Dr. Cournelles, Phila., n. d.

ELISHA PERKINS (1760-1804).

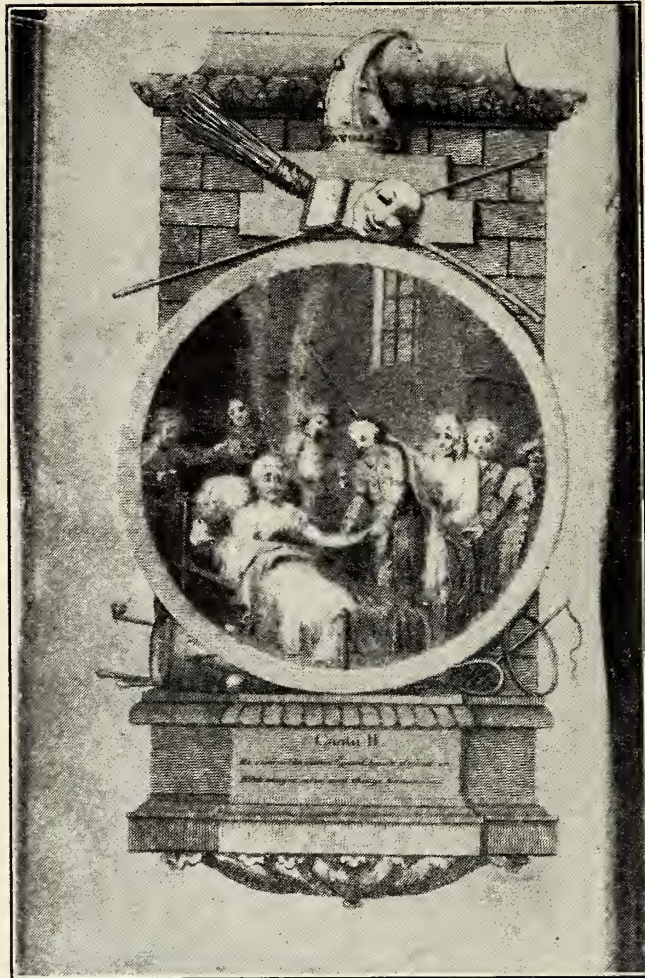
At the beginning of the nineteenth century the popular cure was "tractorism," effected by two metallic-tipped staves, which could be had for the modest sum of three guineas from an American doctor, Elisha Perkins of Connecticut. All the world bought the tractors; grave Copenhagen doctors published a favorable report. In 1804 the Perkinian Institution was built in London, with Lord Rivers as president and Sir William Barker as vice-president; but by 1810 the whole affair had died out, killed partly by ridicule and the publication of *Terrible Tractoration* ("A Terrible Tractora-



PERKINS' METALLIC TRACTORS.

tion! A Poetical Petition Against Galvanizing Trumpery and the Perkinistic Institution. By Christopher Caustic. 1804"§) and exposures made by Dr. Haygarth of Bath, England, who by two pieces of wood colored to resemble the tractors, solemnly cured rheumatic affections and nervous complaints in the Bristol Infirmary, though he says he had great difficulty in keeping his countenance. He sent a pair of spurious tractors to Sir William Watson to use in Guy's Hospital, where they were equally efficacious. It seems curious that, despite dozens of cures so effected, none of the eminent doctors seem to have thought of psychotherapy as a practical adjunct.

§London Medical Review. Vol. III, 1800. P. 38.



TERRIBLE TRACTORATION

by

Chistopher Caustic (T. G. Fessenden, LL.D., Walpole, N. Hamp.) 1802.

The learned physicians pine with hunger
 The while a spruce young patent-monger
 Contrives to wheedle simple ninnies
 And tractorise away our guineas.



A YOUNG CLAIRVOYANTE, WHO USED TO HELP THE REV. CHAUNCEY TOWNSHEND (1839) BY PUTTING HERSELF INTO A TRANCE AND DIAGNOSING DISEASE IN HIS PATIENTS, WHOM HE TREATED BY MESMERISM.

FACTS IN MESMERISM.*

The Rev. Chauncey Hare Townshend, fellow of Trinity College, Cambridge, was a pioneer in the methods used by Worcester, but confined his curative powers to headaches, etc., saying he would not presume to do a doctor's work. He also employed clairvoyants for diagnosing. Agassiz, the naturalist, went to him once "to see if there was anything in it," but "first silently addressed the Author of all things, beseeching Him to give me power to resist the influence and to be conscientious with regard to myself and facts." After being held by Townshend in a mesmeric trance for one and a half hours, he came away firmly convinced of there being something in it.

JAMES BRAID (1795-1860).†

In 1841 there came into the field of mesmerism one Dr. James Braid, originator of the term "hypnotism," determined to expose the illusion, but became himself a convert, and a year later fathered the term "hypnotism" and discovered the truth of auto-suggestion, writing an essay on curative hypnotic power.

Braid was a close observer of Lafontaine, the Swiss magnetizer, and certainly a forerunner of the Nancy School. In 1841 he discovered by experiment *hypnotism and mesmerism to be two distinct agents*, in the former sleep being induced by bright objects, loud sounds, etc.; in the latter by the personality of the magnetizer. Braid devoted his attention specially to epilepsy, and in 1843 wrote his "Neurypnology."‡ Dr. Holland, the Queen's physician; Sir David Brewster, Dugald Stewart and the most distinguished scientists of the day examined and approved Braid's theories, but the medical faculty in England at that time did nothing further than violently denounce or passively acquiesce.

MESMERISM IN INDIA.**

At the same time Dr. James Esdaile, Presidency Surgeon of Bengal at Calcutta, employed hypnotism for over six years, performing no less than 256 operations painlessly in the presence of surgeons and visitors, one of the commonest operations being hypertrophy of the scrotum and large tumors of syphilitic origin. Esdaile frankly gives details of all cases in his book, "Mesmerism in India."

In the presence of five doctors Esdaile when in London removed a large elephantoid tumor, his leisurely way of doing it showing his conviction he was giving no pain. "He then attacked a horrible case of cancer with equal success, and the doctor, all dabbled with blood, had no fear of shocking the other cases ranged in beds

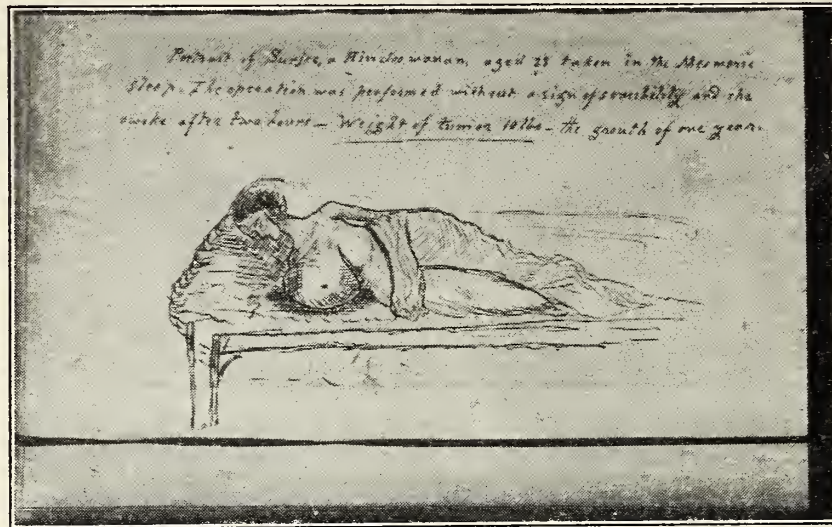
*Chauncey H. Townshend (London, 1840).

†*Nat. Dict. Biog.*

‡*Neurypnology, or the Rationale of Nervous Sleep* (London, 1843).

**James Esdaile (London, 1846).

round the operating-room and sleeping quietly, with their mesmerizers beside them. A large, deep, ragged ulcer under a heel was pared down as coolly as a farrier pares a hoof, and all the patients afterwards had neither pulse nor spirits depressed, and vowed they had felt no pain."



SKETCH FROM ESDAILE'S NOTE BOOK OF TUMOUR WEIGHING TEN POUNDS TAKEN FROM AN INDIAN WOMAN.

PRESS OPPOSITION.

In the *North British Review* for May, 1847, the great surgeon, Liston, wrote to Professor Miller of Edinburgh:

"Hurrah! Rejoice! Mesmerism and its professors have met with a heavy blow and great discouragement. Rejoice! Thine always. R. L."

And the editor of the *London Medical Review* (1843) wrote:

"We have always considered mesmerism, or the system of neurology, one of the most contemptible of the numerous bubbles which the knavery and folly of the present day have clubbed their forces to inflate."

"The mesmero-mania has nearly dwindled in the metropolis into senile fatuity, but lingers in some of the provinces with the *gobe-mouches* and chaw-bacons, who, after gulping down a pound of fat pork, would, with well-greased gullets, swallow such a lot of mesmeric mummary as would choke an alligator or a boa-constrictor."—*Med. Chir. Review*, 1843.

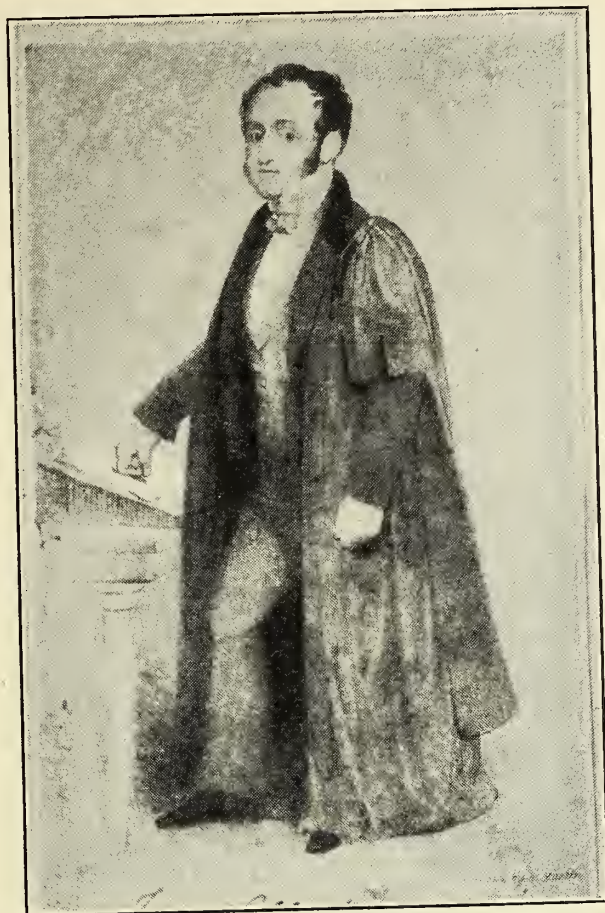
"The science of mesmerism, like fortune-telling, will always carry on a precarious existence wherever there are clever girls, philosophic Bohemians, weak women, weaker men, but can no longer affront the common sense of the medical profession or dare to show its face in scientific societies."—*Lancet*, 1838.

MESMERISM AND ITS OPPONENTS.*

The first operation which took place in England under hypnotism was the introduction of a seton into the back of Elizabeth Okey, under Dr. Elliotson, in 1838.

DR. JOHN ELLIOTSON (1768-1868, BOMBAY, LONDON),
Professor of Practical Medicine, University of London; President Royal Medical and Chirurgical Society.

Dr. John Elliotson, lecturer at University College, London, 1820, when Harveian orator in 1846 pleaded the cause of "mesmer-



JOHN ELLIOTSON, M.D., OF INDIA AND LONDON, WHO DID OVER 100 OPERATIONS UNDER MESMERISM (1843).

ism" as an anesthetic so well that men like Sir James T. Simpson, South and others, privately after demonstration, admitted its efficacy, but refused to openly support it. In 1854, on his return from India, where he had always used it, Elliotson, in the presence of five London surgeons, removed the right breast of a woman while she sat smiling in a reclining chair, and she afterwards, feeling no pain, walked upstairs to the ward.

Notwithstanding his hundreds of cases in India and his operations in London, Elliotson met with no encouragement, but rather cold contempt.

*Sandby (1848, London). Page 51.

THE JADOO-WALLAH.

Dr. Davidson, resident doctor at Jeyepore Hospital, was walking through the Calcutta Hospital with Dr. Elliotson and saw the mesmerizing going on. He remarked: "Ah! now I know what the 'jar-phoonk' of Upper India means—just mesmerism. Many of my people, after I had vainly tried to cure them of severe complaints, used to ask leave to go and be treated by the Jadoo-Wallah, or conjuror, and often returned quite well, saying they had had 'jar-phoonk.' It never struck me that this comes from 'jarna,' to stroke, and 'phoonka,' to breathe."

ANIMAL-MAGNETISM DINNERS.

"It may interest our medical readers and their friends who should visit Paris to know that they can have a good dinner, and afterwards, without additional cost, be magnetized and put into a state of happy somnambulism by the persons who have charge of the house. In a late Paris paper we find the following notice:

"MAGNETISME.—Table d'Hôte at half-past five; price five francs. After dinner magnetic sittings and gratuitous somnambulist advice and prescriptions, at which the guests alone will be admitted. Fifteen tickets may be had for fifty francs.—Rue du Faubourg, Montmatre 33.'" (1843.)

J. STANLEY GRIMES.*

J. S. Grimes, an enthusiast on the subject in America, seems to have been on the same track—*i. e.*, suggestion in the waking state—as Braid, but christened it "electro-biology," and the subject fell into the hands of a host of feather-brained theorists and quacks and thence into disrepute, John Bovée Dods helping largely in its downfall through his extravagancies.

At this time hypnotism was decidedly in the air everywhere.

This picture is from a little book† by a French mesmerist, who gives in it many illustrations showing the magnetic current issuing from the healer's body. He gravely states that Adam and Eve, being in a perfectly healthy condition, were able to keep the wild beasts in subjection by hypnotism.

THE CLAIRVOYANT'S FAMILY PHYSN.‡

Regarding clairvoyant diagnosis I might mention two American clairvoyants—two of the many who were always turning up to arouse wild excitement in small towns.

The first is Mrs. Lucina Tuttle of Genesee county, who was to have a tumor removed from the shoulder, and, as an anesthetic, was mesmerized by a youth named Walker. The tumor, $3 \times 2\frac{1}{2}$ inches, was removed painlessly by a Dr. Cotes, but the patient,

*Lucina Tuttle (New York, 1850).

†*Etherology, or the Philosophy of Mesmerism and Phrenology* (New York, 1845).

‡*Almanach Magnetiseur*.—A. Segouin (Paris, 1854).

while entranced, directed him in operating, and diagnosed accurately further disease in her lungs and stomach. Her fame spread, and so great was the demand on her time that she wrote this little book, "The Clairvoyant's Family Physⁿ," while in a state of auto-suggestion, and diagnosed and healed at a distance the sick of other States, as well as her neighbors.

THE REV. C. B. SANDERS (1831).*

Another celebrity, the Rev. Constantine B. Sanders, was the pride and consolation of Alabama and Tennessee, for he could not only tell at a distance when people were diseased or in trouble and find lost property, but could preach even better in his sleep than when awake, and also sing in finer style. The trances lasted from half an hour to a month, and his best sermons were, unfortunately, written or spoken in the night time. The testimonials are, as usual, signed by two or three medical men.

GERALD MASSEY (1828-1908).

Gerald Massey, the English poet and Egyptologist, with his wife, gave spiritualistic seances in 1852—a curious phase in the man who was born in a little hut, the son of a canal bargeman and one of eight children, all of whom toiled as children from 5.30 A. M. to 6.30 P. M. in a silk factory. Gerald grappled fiercely with poverty, and ended by writing some poems worthy of remembrance, notably that on F. Denison Maurice ("The Kingliest Kings Are Crowned With Thorns"), and by earning a literary pension. America, more appreciative than England, published a second and third edition of his poems and re-created him in the eyes of his literary countrymen.

THE BOOK OF NATURE.†

Boston, of course, did not escape the general infection. Laroy Sunderland, born in Rhode Island, 1804, was a Methodist preacher of such strong hypnotic power that he unintentionally bewitched the congregation and had to discontinue preaching. He published and edited *The Magnet*, a journal devoted to circulating his own science of pathetism, passing the rest of his time "healing the sick by means of sympathy and will."

Scientists and doctors paid him much "attention" (the nature of the "attention" not given). Like the Worcesterites, he abandoned the sterner theology and believed in innate goodness. That he did win over some of our profession is evidenced by the fact that three doctors—Paine, Lyman and Hoyt—joined the Boston ladies in giving him a \$228 gold watch, with "Pathetism" engraved inside. The Philadelphia ladies also gave him a silver cup. His works, notably "The Book of Nature," outdo those of Mrs. Eddy in mystical brain-clogging phraseology.

*X + Y = Z, or, *The Sleeping Preacher*.—G. W. Mitchell (New York, 1876).

†Laroy Sunderland, New York (1853).

TELEPATHIC SNAILS.

That there were odd, crude ideas mixed up with real science in the minds of learned doctors can be shown by this quotation from a book by Dr. William Gregory of Edinburgh, who in 1851 writes:*

"It has lately been stated by M. Allix, on the authority of M. Benoit in Paris and of another discoverer, both of whom, during the last 10 years, have been employed in working out the discovery, that this magnetic sympathy is remarkably developed in snails; that these animals, after having once been in communication or in contact, continue ever after to sympathize, no matter at what distance they may be. And it has been proposed to found on this fact a mode of communication between the most distant places. M. Allis describes experiments made in his presence, in which the time having, of course, been fixed beforehand, words spelled in Paris by M. Benoit were instantly read in America, and as instantly replied to by words spelled there and read in Paris. All this was done by means of snails, and although the full details of the apparatus employed and of all the processes necessary to ensure success have not yet been published, yet the account given by M. Allix and also by M. Benoit goes so far as to enable us to conceive the principle made use of.

"It would appear that every letter had a snail belonging to it in Paris, while in America each letter also had a snail, sympathetic with that of the same letter in Paris, the two snails of each letter having been at some period and by some process brought into full sympathy and then separated and marked. There is, of course, a stock of spare snails for each letter in case of accident. When a word is to be spelled in Paris, the snail belonging to the first letter is brought by some galvanic apparatus, not yet fully described, into a state of disturbance, with which his fellow in America sympathizes. But this requires to be ascertained, which is done by approaching in America to all the snails successively a testing apparatus, not described, which, however, includes a snail. On the approach of this the snail whose fellow in Paris has been acted on exhibits some symptom which is not exhibited by any other, and the corresponding letter is noted down. This is done with each letter, and thus the word is finally spelled."

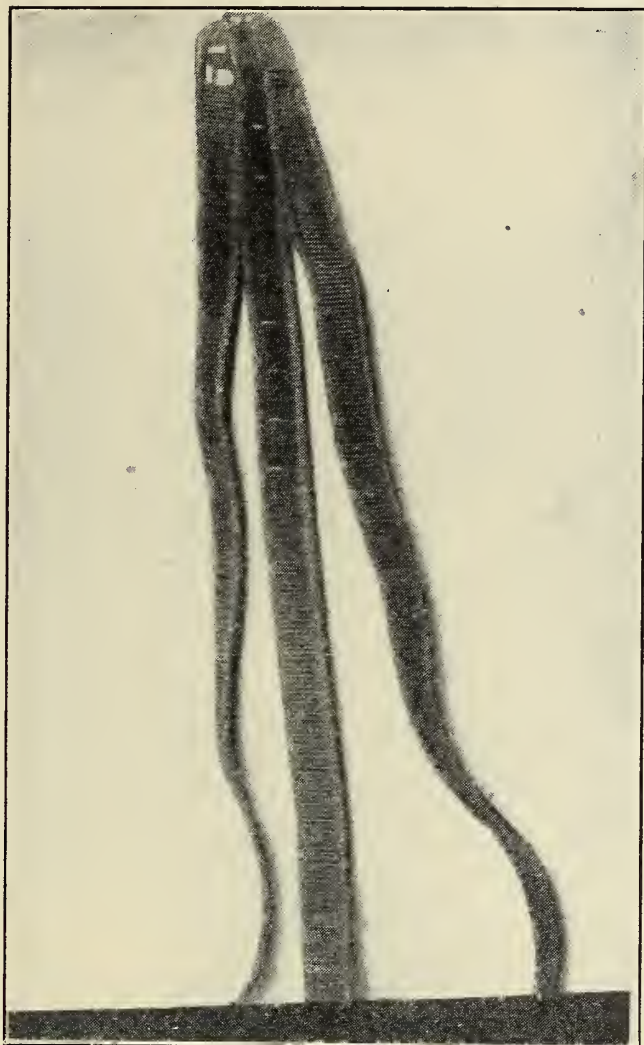
PHINEAS PARKHURST QUIMBY, LEBANON, N. H.—1802-1870 (?).

About 1862 Mrs. Eddy appears, not as a healer, but a crippled invalid, being helped up the steps of one Quimby, who can heal disease through the mind. It remained for an obscure man to found Christian Science as actually known today. This Phineas Parkhurst Quimby of Lebanon, N. H., son of a blacksmith, was a precocious, inquisitive boy, one of an unlimited family with limited means, who managed to get in much philosophy and science in his dull routine of work, and in 1836 was excited and deeply interested

**Letters on Animal Magnetism*.—Dr. Wm. Gregory (London, 1850).

in lectures on magnetism given by a Frenchman, Charles Poyan, in 1838, and found he himself possessed hypnotic power, and could use a young man, Lucius Burkmar, as a clairvoyant in medical diagnosis.

"He told me that my kidneys were in a very bad state; that one was half consumed, and a piece three inches long had separated from it and was only connected by a slender thread. This was



PULVERMACHER BELT.

Three straps of zinc and copper, which had to be dipped in vinegar and worn all night to cure epilepsy, rheumatism and neuralgia. Price \$15. Sold in 1865 in London. Pulvermacher made a fortune by the sale.

what I believed to be true, for it agreed with what the doctors told me and with what I had suffered, for I had not been free from pain for years. My common sense told me that no medicine would ever cure this trouble, and therefore I must suffer till death relieved me. But I asked him if there was any remedy. He replied: 'Yes; I can put the piece on so it will grow, and you will get well.' At this I was completely astonished and knew not what to think. He immediately placed his hands upon me and said he united the pieces so they would grow. The next day he said they had grown together, and from that day I never have experienced the least pain from them."

But while experimenting Quimby became convinced of the efficacy of mind cure, so he adopted the simple method of explaining to the patient the nature of his trouble and changing his attitude of mind toward it. He did sometimes rub the head with wet hands, because it was so hard for the patient to believe simple talk could have the desired result. I need hardly say this mental cure was ridiculed and combated by the whole medical faculty and by a great mass of people, who could not understand "disease to be an error of belief and truth the cure."

Mrs. Eddy was cured by Quimby, but put a new construction on his teaching,* and developed a doctrine which is but a one-sided interpretation of his philosophy.

One man in London about 1868 bid fair to equal Perkins by selling magnetic belts. These were made of zinc and copper.

LIÉBEAULT—1823-1904, NEURTHE.

When Braid died Dr. A. A. Liébeault instituted the famous Nancy school, and soon had more work than he could do. Doubtless many patients did not find it difficult to "think of nothing at all" while under treatment, but he failed to hypnotize everyone. Nevertheless from every continent doctors flocked to study his methods, and Charcot's work at the Salpêtrière is well known to you all.



DR. PAUL DUBOIS.

Professor of Psychotherapy, University of Berne, Author of the best book on the subject, *The Psychic Treatment of Nervous Disorders*, who says there is no need of hypnotism to the extent of profound sleep or catalepsy.

The later psychotherapists are also too recent to need any detailed mention. They are Charcot at the Salpêtrière, and equally influential men, such as Liébault, Richet, Bernheim, Forel, Féré, Binet, Dubois, and in America Hammond, John Bovée Dods, who in 1850 gave a series of lectures before the House of Representatives at Washington; Weir Mitchell, and in England Milne, Bramwell Hyslop, Schofield, Hollander, etc.

**Notes on Spiritual Healing*.—The Rev. B. S. Lombard (1907), Head of the Guild of Health, London.

To many of the laity who think Worcester in America and Lombard in London originated spiritual clinics I would recommend a study of the Rev. George Sandby's book, with its careful references, "Mesmerism and Its Opponents."* Sandby instituted a spiritual clinic,† but, journals and newspapers being few, he escaped the ubiquitous reporters.

He gives the names (authenticated) of many doctors and laity who practiced hypnotism curatively, even for animals. The Duke of Marlborough magnetizes fierce dogs; Harriet Martineau cures a cow suffering from acute disease and restores its full milk-giving



THE PASTOR'S VISIT.

(Painter unknown). Taken from an engraving in an old periodical of 1831.

power; Esdaile's brother, a clergyman, uses mesmerism for his sick parishioners, and "Worcesterism" seems epidemic in England.

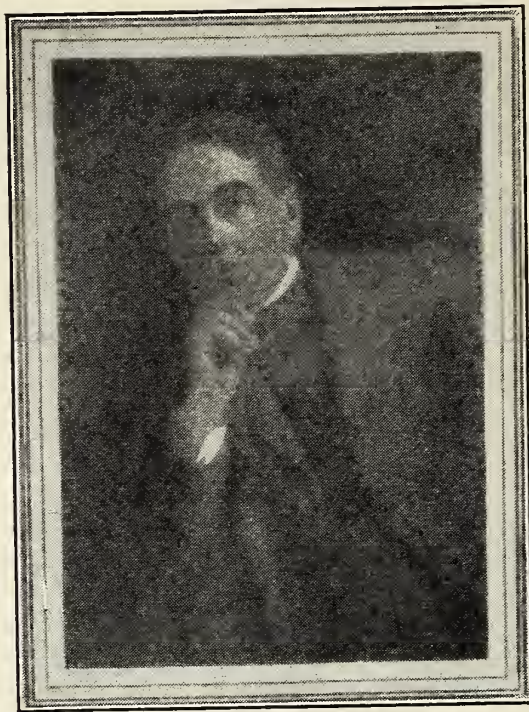
I came across a picture in an old journal of 1831, "*The Pastor's Visit*," where the pastor soothes both the physical and spiritual condition of the patient, and is feeling the pulse of his parishioners.

THE EMMANUEL MOVEMENT

Was started in 1905, in connection with Emmanuel Church, Boston, by holding a tuberculosis class under Dr. Joseph H. Pratt. Drs. Worcester and McComb then instituted a clinic for those suffering from "nervous and moral disease," Dr. Putnam presiding

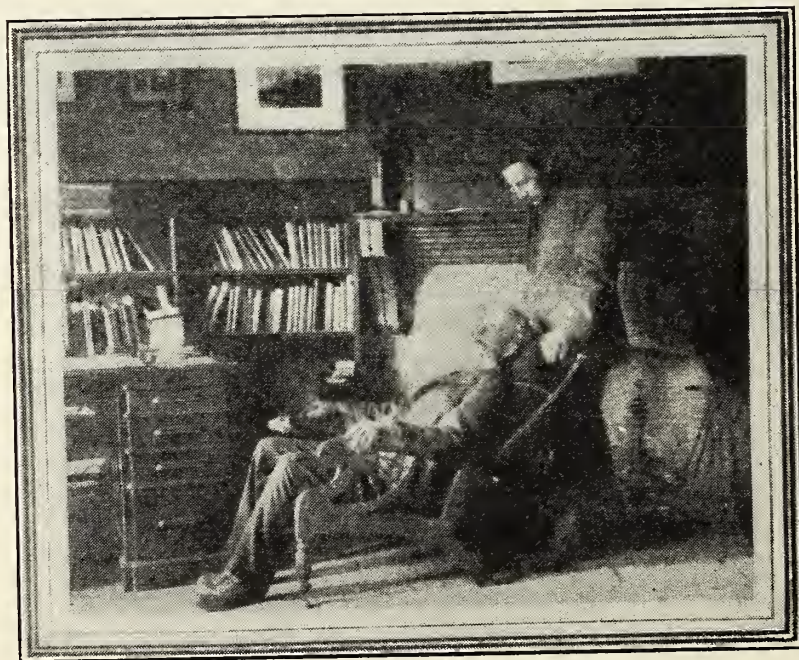
**Mesmerism and Its Opponents*.—Geo. Sandby, M.A., (Longman, London, 1848).

†*Parochial Mesmerism by a Clergyman for His Parishioners*. (London, 1847.)



THE REV. ELWOOD WORCESTER,

D.D. (Pennsylvania and Hobart), M.D. (Leipzig). Professor Psychology Lehigh University. Eight Years Rector St. Stephen's, Philadelphia.



THE REV. LYMAN POWELL

Of St. John's Church, Northampton, treating a patient by suggestion. As a mental cure for insomnia, say to yourself: "I am going to sleep. I am drowsy, drowsy. I can't keep awake. I am drunk with sleep." Never mind if the top of your brain retorts, "Stuff and nonsense!" the underside of your brain takes the hint and lulls your body into slumber.

at the opening meeting. I give his ultimate opinion in a letter to me dated February, 1909:

"Dear Dr. Kelly:

"With regard to the Emmanuel movement, *I entirely agree with you that one important thing is that the doctors should be Christians.* Of course, there are different senses in which that word could be taken, but I have no doubt we should agree as regards the main issues. Besides this, they undoubtedly need a great deal of technical instruction, for while psychotherapy has a very popular side (and it is this which has really furnished the basis of the Emmanuel movement, as well as for Christian Science), it has also a very scientific and difficult side—so difficult that a comparatively small number of physicians have as yet made themselves familiar with it.

"Yours sincerely,

"JAMES J. PUTNAM.

"February 17, 1909."

I conclude that the present movement of psychotherapy is the outgrowth of a long and checkered history in the past. Medical men have here and there recognized and used psychotherapy as a valuable adjunct, but by no means generally and intelligently, and the clergy have taken up a new field and so forced it upon the attention of physicians. The use of psychotherapy calls for peculiar personal endowment and qualifications, both in the medical man as well as the clergyman, and it cannot, therefore, be used as ordinary medicine or surgery.

There is no call for antagonism, but thankfulness on the part of physicians to clergy who have thus opened their eyes in emphasizing a great truth, but the clergy who have taken up this movement are not men of a positive, aggressive, evangelical faith, and they have naturally drifted into this movement under misleading and misguided motives, seeking some vital attraction for the people. This treatment is false work for a clericus, for it undermines his real work of conversion and building up souls, and is more anomalous than the social attractions which substitute religion in so many churches, but there is a wide field of usefulness in reaching these people, in co-operation with and subordination to the medical man in individual cases.

THE GOUTY STATE. Price 25 cents. New York: W. J. Morrison.

"The Gouty State" is a small pamphlet of some 50 or more pages, consisting of excerpts from larger works and journals. It is a brief résumé of the subject as at present understood, and is written in such form as to enable the reader to familiarize himself at a glance with the present status of gout, history, etiology and accepted treatment.

THE FREUND-WERTHEIM OPERATION FOR COMPLETE PROLAPSE OF THE UTERUS.*

By J. M. Hundley, M.D.,

Clinical Professor Diseases of Women, University of Maryland.

IN August, 1908 the MARYLAND MEDICAL JOURNAL contained a paper written by me on the above operation. The paper dealt with the mechanism of procidentia, the older operative methods, and then fully described the Freund-Wertheim operation, or, as Wertheim calls it, "the interposition of the uterus." It is not my purpose now to treat the subject of procidentia as was done at that time. What I wish to do is to emphasize the point that the operation cures these cases of procidentia and that the older operative methods failed to cure them. And another point is that a modification of the operation gives excellent results in the lesser degrees of prolapse, with cystocele, rectocele and a relaxed vaginal outlet. Up to this time I have operated on 28 patients with procidentia by the Freund-Wertheim operation. I have personally examined six of these patients since operation and have heard indirectly from eight others. They are all cured and are comfortable, and have resumed the duties of active life, which they could not do previous to operation. I failed to get any information concerning the other 14. The first operation was done in September, 1906.

It is necessary to describe the Freund-Wertheim operation, so that the modification of the operation referred to may be made clear. As I said in my previous paper, procidentia is hernia, and should be treated as hernias are treated in other regions of the body. It does not matter what the name of the operation is, whether it be a Freund-Wertheim, a Watkins or a Dudley operation; all three are based upon the same principle, and that principle is the utilization of the strong pelvic fascia and of detaching the bladder from the uterus and the vaginal wall. Previous to this advance in the technique of the operation for procidentia I think it can be honestly stated that a lasting cure was a rare occurrence. The pelvic fascia encircles the bladder and sends prolongations around the rectum and vagina, and covers both the under and upper surfaces of the levatorani muscle. The fascia has both a bony and fascial attachment. Now, it is this fascia that is torn or stretched during labor, when there is great disproportion between the head of the child and the birth canal. There is often no visible external tear, but the damage to this fascia manifests itself in the existence of a relaxed vaginal outlet, cystocele, rectocele and prolapse of the uterus. It is needless to go into the mechanism of prolapse at this time, but I wish to emphasize once more that in operating for the cure of prolapse we must utilize the pelvic fascia if a permanent cure is to be had.

The Freund-Wertheim Operation.—The anterior vaginal wall is

*Read before the Medical Journal Club.

opened by a crucial incision. The first incision begins just below the urethra and runs parallel with the vaginal wall to the cervix uteri; here a transverse incision is made. The vagina is now freed from its attachment to the cervix, and it is an easy matter to strip the bladder from the vaginal wall and the uterus with a gauze-wrapped finger. This has to be done with care, otherwise we are apt to tear into large dilated veins, which will cause troublesome bleeding. After the bladder is completely detached it is retracted and held up out of the way, when the peritoneum is opened. After opening the peritoneum the uterus is now delivered into the vagina through the wound. The ovaries and tubes are now inspected, and the further steps of this part of the operation is decided upon. If the woman has passed the menopause, it is only necessary to proceed in the unusual manner. If in the child-bearing period, and it is decided to do the interposition of the uterus, a section from both tubes, near the uterine end, must be made to prevent the possibility of a future pregnancy. It is at this point that the modification of the operation alluded to comes in. I only refer to it here. It will be taken up in detail later.

Having decided to interpose the uterus between the bladder and the anterior vaginal wall, a Vulsellum forceps is inserted into the fundus of the uterus in order that the uterus may be held snugly up under the pubic arch and well into anteversion. With the uterus held in this position, and with the bladder on top of and behind the uterus, the pelvic fascia is sought for, and when found a suture of chromic catgut is passed through the fascia of one side, then through the anterior wall of the uterus and through the fascia of the opposite side, when it is tied. The first suture is passed near the fundus. Three or four such sutures are used, about half an inch apart, extending down to the vaginal cervix. The next step is to excise the redundant vaginal tissue and close the wound with a running suture of plain catgut. I amputate the cervix in all of my cases; Wertheim does not amputate the cervix. By this method of operating the upper angle of the vagina is restored, and the uterus is now at right angles to the vagina, where it must remain. The bladder cannot prolapse and drag the uterus with it, as it is on top of and behind the uterus, and the uterus cannot prolapse again, as it is fixed in anteversion to the strong pelvic fascia. With the uterus in this position the intra-abdominal pressure is constantly forcing it more and more into anteversion, which is also a helpful factor in maintaining the uterus in the normal position. The last step in the operation is to reconstruct the lower end of the vagina. Here, as in the upper end of the vagina, the fascia plays an important part. The levatorani muscle is sought and the two halves are sutured together in the median line. The different planes of tissues are sutured separately, and the lower end of the vagina and rectum are made to hug well up under the pubic arch. No mass sutures are used. I have never had an accident or death from the operation, and the patients are out of bed in 14 days. They do not suffer greatly from bladder symptoms,

but have to be catheterized from six to ten days. The pain about the rectum is often severe. That is due, I think, to the new position of the levatorani muscle. The two halves of the muscle have been separated frequently for months or years. When they are brought together in the median line there is more or less tension, and it is this tension that causes the pain. One would think that in detaching the bladder from the vagina and uterus there would be serious and prolonged bladder symptoms, but such is not the case.

The Modified Freund-Wertheim Operation.—This operation is applicable to that large class of patients suffering from a torn or relaxed vaginal outlet, with cystocele, rectocele and the lesser degrees of uterine prolapse. Until I worked out and adopted this modification of the operation my plastic work in the above class of cases was not entirely satisfactory. I never knew what to do with a retroverted and moderately prolapsed uterus when operating by the older methods. I did what all the other operators did and what many are doing today, and that is either to ignore the malposition, or, after doing an anterior colporrhaphy and perineorrhaphy, open the abdomen and do some sort of suspension operation or round-ligament operation to correct the malposition of the uterus. Many women object to a laparotomy for a condition that in no way endangers life. It is true the death-rate is very low—say 1 per cent.—but there is some risk in every laparotomy. I know of two deaths from intestinal obstruction following a suspension of the uterus. This is not written in criticism, but to show that no operation, however simple, is void of danger. If that be true, why, then, subject a woman to the risk of a laparotomy for so simple a condition as a retroverted prolapsed uterus when a modified Freund-Wertheim operation gives satisfactory and lasting results?

There is no satisfactory intra-abdominal operation for retroversion of the uterus with prolapse. There are many devices for the correction of the malposition, and the fact that there are so many different operations is proof that there is no one operation that answers the requirements. Now, I believe a modified Freund-Wertheim operation more nearly meets the requirements when we have the conditions stated above, as cystocele, rectocele and a relaxed vaginal outlet, than any operation I have ever employed, and I have used many different operations in the last 15 years.

In the modified operation the anterior vaginal wall is opened and the bladder is stripped from the cervix uteri and vaginal wall just as in the original operation. This step is important. A cystocele cannot be cured in any other way. The utero-vesical peritoneum may or may not be opened. I usually open the peritoneum. It does no harm and it enables one to inspect the uterus, tubes and ovaries. I have on five occasions removed small myomas from the uterine wall, and with ease, when doing this operation. In one case four myomas were removed. One of the four was the size of a small hen egg. In this modified operation the body of the uterus

is *not fixed* to the fascia. The bladder is put on a higher level; that is, with a suture of chromic catgut the fascia of the bladder is sutured to the cervix uteri, about the internal os, and then the parametrium is sutured in front of the cervix down to the vaginal attachment. This step in the operation was first done by E. C. Dudley. In utilizing the parametrium, which is nothing more than pelvic fascia and the broad ligament, the cervix uteri is forced backward to the hollow of the sacrum, and in detaching the bladder and suturing it high up on the uterus at about the internal os the body of the uterus is brought forward in anteversion. To further insure the maintenance of the uterus in anteversion the relaxed and torn vesical fascia is brought together and puckered up by a suture of catgut. The body and fundus of the uterus is not fixed or sutured in any way. I wish to emphasize this point once again. Labor can in no way be interfered with by this operation. The remaining steps in the operation is carried out just as in the original operation.

THE COMMERCIAL VALUE OF AN EARLY AND CORRECT DIAGNOSIS.*

By William J. Todd, M.D.,

Mt. Washington, Md.

A YOUNG man, a cadet in one of the military colleges near Baltimore, came home to spend the holidays. He brought with him two of his friends, cadets from the same college; the matron of the college a friend of the family, also came to his father's house. In addition to these four visitors in this household was a youth who is attending the public schools, a young daughter, who is also attending school; the father, a bank officer in one of the large banking institutions of Baltimore city, and a daughter, a trained nurse. On December 26 the father consulted me at my office, stating that his son had a high fever and an inflamed throat and asked for medicine. I prescribed for the youth and saw him the next day. My notes, made at the time, read that he had a temperature of 100.4; throat very much inflamed; a thick deposit on both tonsils, and a foul-smelling breath; tongue very much coated; pulse 72; respiration 16. Feeling that I could not make a positive diagnosis in the case without the assistance of laboratory measures, I returned to the house at 2 P. M. and took a swab from this young man's throat. At about 4 P. M. the culture was in the laboratory of the State Board of Health. During these two visits the following conditions developed and confronted me: the matron of the military school must return to her duties the next day at 12 M., the train leaving at that time; the bank official must

*Read before the Baltimore County Medical Association, January 20, 1910.

return to his bank; the two cadets must be in readiness to return to their school at the expiration of their furloughs; the two children must return to the public school when their vacations expired. If the disease from which the young man was suffering was diphtheria, the military school, which contained some 250 students, must be protected, and the matron, particularly, must be prevented from returning; if the disease was not diphtheria, then an injustice would be done to the matron and the other members of this large household by quarantining them. A correct diagnosis must be made before 10 A. M. the next day. My action in the matter was this: the matron and her young son were sent to a home where there were no children, to be in telephone communication with the mother of the sick young man; the cadets and young children of the family were to remain in the house where they were visiting; the bank official was to use the best precaution he could under existing conditions. At 9.30 A. M., December 28, I learned over the 'phone from the laboratory of the State Board of Health that the culture was negative. I immediately telephoned this report to the mother of the sick patient; she, in turn, telephoned to the matron. With this information it was safe for her to return to her duties at the military school; it was safe for the cadets to return to their duties as students. The subsequent history of the attack showed that the diagnosis was a correct one. The principal reason for reporting this case is to show the great responsibility resting upon the physician having such a case in charge; the many directions in which such a case ramifies, and the commercial value of a correct diagnosis, the disaster which might have resulted had the case been diphtheria and diagnosed tonsillitis, and the different members of this household allowed to return to their several duties, also the short space of time in which this information had to be gathered and acted upon, and the decision made.

TEXTBOOK OF MEDICAL AND PHARMACEUTICAL CHEMISTRY. By Elias H. Bartley, M.D., Ph.G., Professor of Chemistry and Toxicology in the Long Island College Hospital. Seventh revised edition. Philadelphia: P. Blakiston's Son & Co. 1909.

The acceptability of this textbook to the student and teacher has been abundantly proven by the number of editions which have been called for. So satisfactory has the work been that but few changes have been made in the present volume. As far as possible the subject has been confined to the application of chemistry to practical medicine, with the exclusion of strictly physiological chemistry. In this way much room has been secured for the discussion of clinical applications. Special attention has been paid to the voluminous index at the end of the volume. The typographical work is in keeping with the high reputation of the publishers.

JENNER.

(1749-1823.)

TWELFTH OF A SERIES OF ESSAYS ON THE HISTORY OF
MEDICINE FROM THE EARLIEST TIMES.

By H. M. Cohen, M.D.

CHAPTER XII.

It has been left to few men to prove so great a benefactor to mankind as was Jenner. Smallpox, from being one of the greatest scourges of mankind, has through his discovery been reduced to almost a medical curiosity. From an ever-present plague, his vaccination has converted it into an unusual circumstance. Its victims had numbered untold millions, and from the earliest Chinese and Hindustan ages down to the eighteenth century the world proved itself helpless to check its terrible march.

At Berkeley, Gloucestershire, England, in May, 1749, Edward Jenner, the discoverer of vaccination, was born, the third son of a Church of England clergyman. His early education was acquired in the usual manner of the country boy, and he was put in the way of practicing medicine by a Mr. Ludlow, a country practitioner, under whose guidance he developed that love for nature which ultimately led to his great discovery.

In 1773 or 1774 he took up the practice of medicine at Berkeley, and to all outward appearances he became the usual rural physician of that time. But Jenner was more than a mere medical man. He was also a naturalist, and on his rounds over the nearby country he investigated nature's great storehouse, acquiring a love for the field and its inhabitants that extended from the dormouse to the celebrated Gloucester cattle.

While assisting his preceptor, Mr. Ludlow, he had been informed by a country woman that, in her opinion, she was immune against smallpox because of a previous attack of cowpox. This was in accordance with an old tradition, long a popular belief among the rural folk, but not accepted by the medical profession, probably not even considered by them. But the idea appealed to Jenner, and later, when visiting his great friend and former teacher, John Hunter, in London, he mentioned it to him and was told "not to think, but try," quite in accord with the advice that might come from any distinguished physician to a younger protege. So Jenner returned, encouraged, and spent much time and thought on the matter.

In 1780 he confided to his lifelong friend, Gardner, the result of his research. "I have entrusted a most important matter to you, which I firmly believe will prove of essential benefit to the human race." The secret consisted in his belief that he was able to propagate a variety of cowpox from person to person which would render the individual immune from the greater disease. He had not yet worked out satisfactorily the exact details, and he was therefore not yet ready to make a general announcement.

In 1798 he began the preparation of his account of the process of vaccination, and published it in 1801 under the title of "The Origin of the Vaccine Inoculation." He says, as quoted by Russell:

"In the course of the investigation of this subject, which, like all others of a complex and intricate nature, presented many difficulties, I found that some of those who seemed to have undergone the cowpox, nevertheless, on inoculation with the smallpox, felt its influence just as if no disease had been communicated to them by the cow. This occurrence led me to inquire among the medical practitioners in the country around me, who all agreed in this sentiment—that the cowpox was not to be relied upon as a certain preventive of the smallpox. This for a while damped, but did not extinguish, my ardor; for, as I proceeded, I had the satisfaction to learn that the cow was subject to some varieties of spontaneous eruptions upon her teats; that they were all capable of communicating sores to the hands of the milkers, and that whatever sore was derived from the animal was called in the dairy cowpox. Thus I surmounted a great obstacle, and in consequence was led to form a distinction between these diseases, one of which only I have denominated the *true*, the others the *spurious* cowpox, as they possess no specific power over the constitution. This impediment to my progress was not long removed before another, of far greater magnitude in its appearance, started up. There was not wanting instances to prove that when the true cowpox broke out among the cattle at a dairy, a person who had milked an infected animal and had thereby apparently gone through the disease, in common with others, was liable to receive smallpox afterwards. This, like the former obstacle, gave a painful check to my fond and aspiring hopes. But, reflecting that the operations of nature are usually uniform and that it was not probable the human constitution (having undergone the cowpox) should, in some instances, be perfectly shielded from the smallpox, and in many others remain unprotected, I resumed my labors with redoubled ardor. The result was favorable; for I now discovered that the virus of cowpox was liable to undergo progressive changes from the same causes precisely as that of the smallpox; and that when it was applied to the human skin in its degenerated state it would produce the ulcerative effect in as great a degree as when it was not decomposed, and sometimes far greater; but, having lost its *specific properties*, it was incapable of producing that change upon the human frame which is requisite to render it unsusceptible of the *variolous contagion*, so that it became evident a person might milk a cow one day, and, having caught the disease, be forever secure; while another person, milking the same cow the next day, might feel the influence of the virus in such a way as to produce a sore or sores, and in consequence of this might experience an indisposition to a considerable extent; yet, as has been observed, the specific quality being lost, the constitution would receive no peculiar impression." * * * "During the investigation of the casual cowpox I was struck with the idea that it might be practicable to propagate the disease by inoculation, after the manner of the smallpox, first from the cow, and finally from one human being to another. I anxiously waited some time for an opportunity of putting this theory to the test. At length the period arrived. The first experi-

ment was made upon a lad of the name of Phipps, in whose arm a little vaccine virus was inserted taken from the hand of a young woman who had been accidentally affected by a cow. Notwithstanding the resemblance which the pustule thus excited on the boy's arm bore to variolous inoculation, yet, as the indisposition attending it was barely perceptible, I could scarcely persuade myself the patient was secure from the smallpox. However, on being inoculated some months afterward, it proved that he was secure."

This so encouraged Jenner that he took the first opportunity to repeat the experiments, and soon he was able to convince his rural colleagues that his idea was not only feasible, but extremely practicable.

As much, however, could not be said of the physicians of the metropolis. Many of his professional brethren not only displayed the greatest opposition to him, but actually had the ignorance to ridicule him at the same time. And, as for the laity, many of them declared that it was flying in the very face of Providence to attempt to prevent the smallpox. However, this could perhaps be overlooked in them and might be attributed to their ignorance of the matter. But this should not be a plea for trained medical men. Yet we find that very often the greatest opposition to progress in medicine has had its source within the medical body proper.

The introduction of mercury and antimony by Theophrastus and his followers caused them to be termed common quacks, and the same difficulty was encountered by Sydenham and his friends when they availed themselves of cinchona in the treatment of malaria.

Ambrose Paré was compelled to undergo a struggle for the acceptance of his innovation displacing the cruel and barbarous red-hot iron by his simple and easy method of tying a gushing artery. And Sir James Simpson was driven to meet and defeat a host of antagonists in order to preserve the very life of chloroform anæsthesia. Even in our own more or less enlightened generation, Professor Behring was not immune from attack by a host of medical men who could not be brought to see the value of his antitoxin against diphtheria.

Jenner spent three weary months in London in an endeavor to interest the medical men of that city in his discovery, and it is an unexplainable fact that he could not during this time find anyone to lend ear to his beneficent innovation.

Soon, however, the stories of the country doctor's success in the prevention of smallpox spread throughout the kingdom, and even London awoke to its importance. He was advised to move to the capital and there engage in practice, where, he was assured, his great reputation would be worth to him £10,000 a year. This proved no inducement to him; but when he learned that inefficient hands were unskillfully practicing his inoculations, which bid fair to undermine their value, he hastened to London, and through expostulation and entreaty finally corrected the many mistakes in time to save his discovery from utter destruction.

It did not take much longer for Jenner to receive universal rec-

ognition. The value of his vaccinations was soon appreciated by nearly all the world, and Parliament was miserly enough to grant him the paltry sum of \$20,000 for the good he did the state. The injustice of this was so apparent that later the amount was doubled.

Vaccination spread quickly. Associations for its encouragement sprang up everywhere. On March 12, 1799, Dr. Waterhouse published an article in the *Columbian Sentinel* on the discovery, which resulted in a meeting of the American Academy of Arts and Sciences, presided over by John Adams, President of the United States.

About the same time Dr. De Carro introduced it on the European continent, and in a marvelously short period the remotest lands were practicing vaccination.

Jenner's reputation was already worldwide. The Empress Dowager Mary of Russia and other European royalties sent him congratulatory addresses and his name was the most honored of the day.

An Englishman, Dr. Wickham, had been made prisoner in France and a petition was prepared by his colleagues to be presented to Bonaparte, praying for Wickham's release. The paper was drawn up by Jenner. Napoleon was in his carriage when the petition was presented. He impatiently refused to look at it. "But," declared Empress Josephine, who was with him, "do you see whom this comes from? Jenner!" At once the "Man of Destiny" changed his tone and said: "What that man asks is not to be refused." And he immediately ordered that the physician be released.

Jenner was introduced to Alexander of Russia at that potentate's request, while the latter was on a visit to England in 1814, and was greatly pleased by the enthusiasm shown by the monarch in extolling the great benefits of vaccination in Russia. He was shortly afterwards offered a decoration by His Majesty, but declined the honor. He also received an interview from the King of Prussia, who was the first monarch to avail himself of Jenner's discovery by having his own child vaccinated, an example which was soon followed by the Emperor of Austria.

Jenner, however, did not always experience smooth sailing. In England the opposition at times grew to enormous proportions, and the vituperation hurled at him from many sources would have more than discouraged a less determined man. However, the beneficence of his discovery was so apparent that its recognition gradually became practically universal. He died in 1823. A grateful public erected to his memory a statue in London.

The following beautiful lines are inscribed on his tomb:

Within this tomb hath found a resting place
The great physician of the human race—
Immortal Jenner! Whose gigantic mind
Brought life and health to more than half mankind.
Let rescued infancy his worth proclaim,
And lisp out blessings on his honor'd name;
And radiant beauty drop one grateful tear,
For beauty's truest friend lies buried here.



JAMES BOSLEY, M.D.,
Commissioner.

C. HAMPSON JONES, M.D.,
Asst. Commissioner.

THOS. L. RICHARDSON, M.D.,
Asst. Commissioner,
Quarantine.

M. HARRY LAIB, Secretary.

Bacteriological Laboratory:
WM. ROYAL STOKES, M.D., Director.

Chemical Laboratory:
W. E. HOFFMAN, JR., Ph.D., Director.

This Department is Under the Direction of the Commissioner of Health

FLEXNER'S SERUM IN THE TREATMENT OF CEREBRO-SPINAL FEVER.

It was during the epidemics in America and Europe from 1904 to 1907 that the *Diplococcus meningitidis*, discovered in 1887, was proved to be the cause of epidemic cerebro-spinal fever. As the result of experiments with this organism instituted after the latest epidemic in New York, Flexner¹ produced a serum with which he was enabled to prevent fatal termination following inoculation into guinea pigs and monkeys of otherwise lethal doses of the meningococcus. Since that time the antimeningitis serum has been used in about 1000 cases of epidemic meningitis occurring at various places in this country and abroad. The reports sent to the Rockefeller Institute have been uniformly favorable. Before dwelling at more length on this aspect of the subject, however, a short description of the method of its preparation and administration might not be ill-timed.

This antiserum is prepared by the subcutaneous inoculation of horses with gradually increasing doses of living cultures of the diplococci and of an autolysate, administered alternately at intervals of seven days.

As to the mode of administration opinion is unanimous. It is worse than useless to inject it except subdurally following lumbar puncture and the withdrawal of the spinal exudate. Flexner's observation that normal serum and sterile exudates are bactericidal for the *Diplococcus intracellularis in vitro*, together with animal experimentation, led to his adopting this method of administration. He believed at the time that the benefit to be derived from the bactericidal effect of the serum would greatly outweigh any academic objections on the ground that such action would set free the endotoxin of the diplococci. This assumption has been verified by the results obtained. It would seem to be the opinion of all who have used antimeningitis serum that, though not destitute

of antitoxic properties, it is dependent for its action primarily upon its bactericidal effect and its power to increase phagocytic ingestion of the diplococci. Flexner also suggests that the endotoxin is rendered innocuous by phagocytic digestion.

Until some method of standardizing this serum is devised it must be administered in terms of cubic centimeters, and not units. The dose recommended by Flexner is 30 c. c., this being injected after withdrawing at least an equal quantity of spinal fluid. This precaution, however, does not seem to be essential. Indeed, in very severe cases it would seem that the danger from the disease is greater and more imminent than that to be apprehended from a moderate increase of intradural pressure. The dose should be repeated every 24 hours for three or four days, or longer if necessary. That 30 c. c. is not the maximum dose that can be given with impunity is instanced by the experience of Dunn, who has administered 45 c. c. at a time.

Jobling² proposes that definite strength in specific opsonins be used in standardizing antimeningitis serum, suggesting as the minimum dilution activity a 1—5000 dilution of the serum.

A condition of hypersensitiveness does not seem to be produced by this serum, for it has been injected without bad effect after a considerable interval has elapsed since the previous administration.

For the first injection one need not wait for bacteriological examination, but is justified in introducing it when available if the lumbar puncture reveals turbid fluid in the spinal canal. However, unless the *Diplococcus intracellularis* is found culturally or on staining, this treatment should be abandoned, as it is specific and, therefore, without virtue except in spinal meningitis of meningococcic origin.

Passing now to its effects, attention is attracted first by the low death-rate. Although thoroughly imbued with the fact that the mortality varies greatly during different epidemics, and even during the same epidemic, yet one would be loath to offer this as an explanation of the low death-rate in serum-treated cases.

Whereas Osler gives the death-rate from cerebro-spinal meningitis as varying from 20 to 80 per cent., and Holt from 40 to 80 per cent., the lower rates seem to be confined almost entirely to the sporadic cases, and even here to be rather the exception than the rule. Thus in Boston, prior to November, 1907, the mortality varied from 58 to 80 per cent., with an average between 70 and 80. At Hopkins³ during the 19 years preceding the use of antimeningitis serum the death-rate varied between 43 and 100 per cent., with an average of 64. In the latest epidemic sweeping over Europe and America the rate was 75 per cent.

Avoiding tiresome repetition and proceeding to the results attained by the various men using Flexner's serum, a very striking reduction of the mortality from this disease is seen. Thus Dunn⁴ treated a series of 40 cases of meningococcic cerebro-spinal fever irrespective of type or stage, and of these only nine, or 22.5 per cent., died. Of the deaths five were chronic cases and one was

fulminating. As one of the chronic cases was moribund at the time of injection, and the fulminant died too soon thereafter to allow the serum to have any beneficial action, it seems only fair to omit these. If this is allowed, we have seven deaths in 38 cases, or a rate of 19 per cent.

Knox and Sladen⁵ report 21 cases thus treated, with only three deaths—a percentage of 14. Of 12 cases under 12 years of age, one died, or 8 per cent.

Royer⁶ in 17 cases had seven, or 40 per cent., result fatally. Three of these were unsatisfactorily treated, and with these eliminated the rate falls to 28.5 per cent.

Fulton⁷ in a series of 22 cases lost seven. As three of these were dying at the time and one had been sick five months before treatment was begun, it is only just and equitable that these be omitted. If this is done, only three, or 16.6 per cent., of 18 died.

Ladd⁸ used Flexner's serum in 31 cases and had 11 deaths—35.5 per cent. As four were *in extremis* and two were chronic cases, these cannot be admitted as evidence against the efficacy of this treatment. Subtracting these, we have 25 cases, with a mortality of 20 per cent.

Churchill⁹ in 29 cases had 13 fatal terminations, but three of these were fulminant and two were not closely followed up. He was greatly impressed by the low death-rate in cases treated early.

Holt¹⁰ admits its usefulness, and Koplik¹¹ is impressed by the reduction of mortality in cases under two years of age.

Chase and Hunt¹² had 9 recoveries out of 12 treated, and one of the fatalities was pulseless at the time of injection. During the same epidemic 9 out of 10 cases not serum-treated died.

During the epidemic at Belfast, Robb¹³ used Flexner's serum in 30 instances, with a death-rate of 26.6 per cent. A series of 34 cases occurring at the same time, but not thus treated, resulted in a mortality of 85.2 per cent. In the first series three were fulminating and four received treatment late in the disease.

Any one series of cases can but be considered as suggestive, but when taken together the proof is almost conclusive. Flexner and Jobling¹⁴ in an analysis of nearly 400 cases, of which complete records have been sent to the Rockefeller Institute, find that the mortality is only 25 per cent. A later compilation by Flexner¹⁵ shows a death-rate of 31.4 per cent. in 712 cases, including a number in which treatment was instituted late in the disease. This compilation, including a large number of cases reported from various countries, is a better criterion than any single series, and from this alone it would seem that at last we have a remedy with which we may hope to combat cerebro-spinal fever.

The death-rate in serum-treated cases varies according to the age of the patient, being highest in those under two years—42.3 per cent.—and lowest in those between 5 and 10 years. However, the above-mentioned mortality for infants compares very favorably with that for those not serum-treated, where it is 90 per cent. or over.

As one would naturally expect, the chances for recovery are much better when treatment is instituted early. Especially in infants does early treatment increase the percentage of recoveries.

In all the aforementioned instances the type of the disease was, so far as could be determined, no less severe than in previous epidemics.

The diminution in the death-rate is not the only nor is it the most remarkable result obtained. Everyone who has used the serum calls attention to the rapid improvement in the condition of the patient, the fever and other symptoms abating soon after injection. In 25 per cent. of the cases the temperature falls by crisis. Along with the declining temperature the patient recovers consciousness, mental dullness and delirium disappearing, as do the headache, hyperesthesia and vomiting. Retraction of the head and Kernig's sign are the most persistent symptoms. As to the recovery being greatly expedited by the use of antimeningitis serum there is not a dissenting voice.

Synchronously with the symptomatic improvement, the spinal fluid loses its turbidity and the hyperleucocytosis decreases. Hand in hand with this, the total number of diplococci in the fluid diminishes, the proportion of intracellular organisms increases, the contour changes, the sharpness of outline disappears, they stain indifferently and are less readily cultivated.

In a small number of cases after apparent recovery relapses occur. Such recrudescences, when early recognized, are readily controlled by the prompt resumption of serum-therapy.

In former years those who escaped death were often left permanently disabled. When Flexner's serum is used the recovery is complete in almost all cases, serious sequelæ being of rare occurrence.

From the facts above adduced it would seem that we have here a specific remedy only second to diphtheria antitoxin. However, since Flexner himself has reserved his judgment until the serum can be tested in a widespread epidemic, it would be presumptuous in us to do otherwise. The opportunity seems to have arrived in the epidemic in France, and reports so far have been extremely encouraging, the death-rate being below 25 per cent. in serum-treated cases. The fact that it is being used but little outside of Paris offers an excellent opportunity for a comparative statistical study.

In conclusion, we cannot do better than quote Flexner: "It is our opinion that the analyses of histories of cases of epidemic meningitis which have been presented * * * furnish convincing proof that the antimeningitis serum, when used by the subdural method of injection, in suitable doses and at proper intervals, is capable of reducing the period of illness; of preventing, in large measure, chronic lesions and types of infection; of bringing about complete restoration to health in all but a very small number of the recovered, thus lessening the serious, deforming

and permanent consequences of meningitis, and of greatly diminishing the fatalities due to the disease."

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F. W. HACHTEL, *Assistant Bacteriologist.*

HEART DISEASE, BLOOD PRESSURE AND THE NAUHEIM-SCHOTT TREATMENT. By Louis F. Bishop, M.D., Clinical Professor of Heart and Circulatory Diseases, Fordham University School of Medicine, New York City. Third edition. E. B. Treat & Co., New York. 1909. Price \$3.00

This book meets two needs of the general practitioner—the need which he feels, as he grows in general experience, for gaining a more thorough and masterful conception of certain hitherto obscure subjects; the need of equipping himself better for treating those diseases of elderly, well-to-do patients, which accumulate in his practice as years go by. In the volume before us Dr. Bishop has given an exceedingly clear and comprehensive monograph upon the subject of heart and blood-vessel diseases and their treatment in his own practice by the Nauheim-Schott method of exercises and baths, as diagnosed by the help of his own simple apparatus for determining blood pressures.

Dr. Bishop is one of the few authors whose books are worth adding to the library of the busy practitioner. His statements are lucid; his views broad. An entire chapter of the book is given to illustrations of the Nauheim-Schott exercises.



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THE sixth meeting of the Maryland Psychiatric Society was held at Mount Hope Retreat on Tuesday, January 4, 1910. After a thorough inspection of the hospital a luncheon was served and the meeting called to order. The minutes of the previous meeting were read and approved. Papers were read by Dr. C. B. Ensor on the "Wasserman Reaction, Its Value, With Demonstration"; and by Dr. Charles G. Hill, on "Quantitative Urinalysis and Estimate of Blood Pressure as an Indication for Therapeutic Application in Asylum Treatment."

A report was then offered by Dr. Arthur P. Herring, on behalf of the committee on after care, which is published on the following page. It was ordered that Drs. J. Clement Clark and R. P. Winterode and Mr. N. G. Grasty be added to this committee and that it be considered a permanent one, and that its report be adopted.

It was moved that an invitation be extended to the National Association for the Study of Epilepsy to hold their next annual meeting (in May) in Baltimore.

A committee of three—Drs. Arthur P. Herring, Henry M. Thomas and William R. Dunton—were appointed to take charge of the arrangements for said meeting, after which the meeting adjourned, to meet at Athol.

Tentative Plans

RECOMMENDED BY THE AFTER-CARE COMMITTEE



1. Co-operation with the Federated Charities, with the Young Women's Christian Association and with the City Charities. The efforts of the after-care committee, both in placing patients in families or finding them some occupation and keeping in touch with patients after they have been placed, can best be accomplished through some one of these charity organizations. The plan would be to have an agent from one of these organizations visit the patient at least once a week for the first month and report to the after-care committee.

2. At first the efforts of the after-care committee would be directed solely in the interest of the recovered cases; such patients, for example, whose relatives refuse to take them home or whose home surroundings are not best suited for their return. Such patients would be either placed in a home or would be furnished employment and a boarding place found for them.

3. The examination of every patient should be conducted by the after-care committee and a careful record kept of their mental and physical condition and the suggestions which the committee advise being carried out.

4. The patients are to be paroled from the hospital, instead of being discharged, for 30, 60 or 90 days, and placed under the care of the after-care committee. If at any time the patient shows symptoms of mental disturbance it will be the duty of the after-care committee to see that the patient is returned to the hospital.

5. Patients are to be discharged only after they have demonstrated their ability to take care of themselves, and, upon the recommendation of the after-care committee, the superintendent shall formally discharge the patient.

6. The paroled patients should report in person at least once every 30 days to the after-care committee for examination.

7. The ultimate result of the work of this committee should be the foundation of an industrial colony composed of either the recovered, improved or chronic cases who are capable of taking up some form of occupation, and yet whose condition does not demand their remaining in a hospital. This, of course, is a work for the future, and numerous details must be worked out before anything definite can be determined.

MARYLAND MEDICAL JOURNAL

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BALTIMORE, MARCH, 1910

EARLY RISING AFTER CHILDBIRTH.

THE old regime of scanty and insufficient nourishment during a carefully watched and unduly prolonged period of bedrest has to a certain extent within the past few years lost its prestige. It has been claimed that it is not to the advantage of the normal and healthy woman to be kept for weeks lying in bed. The reduced activity of the heart and of all voluntary muscles thus obtained interferes with the proper distribution of the blood and impairs the function of all organs.

It is an ordinary experience to find women of the working class rising from bed a day or so after childbirth with apparently no ill-results. The habit of savage people to rise immediately after expulsion of the child is common knowledge. A sudden fire in a maternity hospital in Switzerland drove all the puerperae, including the very recently delivered, out of their beds, some of whom even ran to the top floor to save their belongings, yet, according to reports, not one was harmed by this experience. Kuestner 30 years ago decided that early rising does not harm a puerperal woman; it does not cause fever, it does not result in prolapse or retroflexion. Indeed, such a procedure proves advantageous, because it hastens the involution of the uterus, favors defecation, and enables the woman to urinate spontaneously, thus obviating catheterization and overdistension of the bladder, the latter an important etiologic factor in the causation of descensus of the vagina. The chief advantage of early rising, however, consists in the early use of all the muscles, which stimulates cardiac action and circulation.

Kuestner selected his patients with great care. He excluded those in whom the perineum, vagina or cervix had been torn during birth, those who had an elevated temperature, from whatever cause, and those who had been artificially delivered or had passed through a long and tedious but spontaneous labor. The patients usually left the bed on the third or fourth day; some, however, rose on the

second day, at first for a few hours only, and gradually increasing the time until the fifth, sixth or seventh day they were out of bed all day.

The maternity clinic of the Royal Charité in Berlin reported recently that women were permitted to leave the bed in from 15 to 24 hours after childbirth, regardless of the number of preceding births or the age of the patient; the only exceptions being patients who had passed through an unusually long labor, who showed an elevation of temperature, who had suffered injuries, especially as the result of obstetric operations, who had lesions of the heart, lungs or kidneys, and those suffering from gonorrhea. Patients were permitted to sit quietly in a chair, but prohibited from walking around. They wore a tight abdominal binder, and gradually increased the time spent out of bed to two hours in the forenoon and two in the afternoon. Martin emphasized the rapid involution of the uterus, the ease with which these patients emptied the bladder and bowels and recuperated from the effects of labor. The upright position facilitated the discharge of the lochial secretions, thus doing away with a favorable soprophytic nidus.

Even with all of the above-mentioned apparent advantages, Robert Muellerheim (Berlin, Germany) in an article translated by Hugo Ehrenfest and published in the *Interstate Medical Journal*, advises the general practitioner to be exceedingly cautious in resorting to this method of handling the puerperum. He says that his connection with the Convalescent-Home of Puerperae in Berlin has given him a splendid opportunity to study the sequelae of labor following early rising and that many patients discharged from the Charité came afterwards to him for prolapses, retroflexions, etc.

Thus the matter stands, many eminent specialists urgently advocating early rising, whilst others, just as competent, declare rash rising sooner or later reduces the patient to chronic invalidism. Still one must bear in mind the religiousness with which surgeons followed the old standard of keeping a laparotomy in bed for three or more weeks, only to have the practice shattered by iconoclasts sufficiently brave to attack the traditional custom. At present one recognizes that there are no hard and fast rules governing the time of getting these patients out of bed, each case being a rule unto itself. So in obstetrical practice, if there be no contraindications, the attending physician is certainly justified in getting puerperal patients out of bed much earlier than was formerly deemed prudent.

Medical Items.

THE Church Home and Infirmary will erect a building on the lot adjoining on the north to provide suitable quarters for 50 nurses in training.

FIRST LIEUT. HYMAN M. COHEN, M.D., formerly of Baltimore, has been ordered to service in the Philippines, to leave April 15. Dr. Cohen spent five years in the Philippines as captain and assistant surgeon to the Nineteenth Infantry, and has lately been stationed at Fort Rodman, Mass.

THE Municipal Art Society is advocating the placing of a statue to the memory of Johns Hopkins on Charles-street Boulevard, between the two proposed entrances to Homewood. The design, made for the society by Mr. Hans Schuler of Baltimore, shows three figures, the central one being Johns Hopkins and on either side the university is represented by the figure of Wisdom and the hospital by Charity. It is said that about \$7500 has already been raised and the total cost will be about \$25,000.

MEDICAL DIRECTOR GEORGE E. H. HARMON, M.D., University of Maryland, '72, will be placed on the naval retired list March 5.

LOUIS McLANE TIFFANY, M.D., will spend six weeks in the South.

FRANCIS J. SAVAGE, M.D., of St. Paul, Minn., is taking a special course at Johns Hopkins Hospital.

EDITH EARECKSON, M.D., who has been quite ill, is considerably improved.

THE annual report of the Sheppard and Enoch Pratt Hospital has been issued, and contains a letter from Dr. Brush, in which he sets forth the need of State care of the insane.

MEDICAL DIRECTOR JOHN C. WISE, M.D., Washington University School of Medicine, '69, will be placed on the naval retired list October 7.

THE enlarged Hospital for the Women of Maryland has been officially opened for the reception of patients.

DR. CHARLES MAYER FRANKLIN will sail for Europe early in April and will remain abroad until October.

RICHARD H. LEWIS, M.D., University of Maryland, '71, has been elected president of

the Wake County Medical Society of North Carolina.

DR. JOHN S. FISCHER has returned from a trip through Germany.

DRS. CHARLES O'DONOVAN, Samuel G. Earle, J. Whitridge Williams, J. Clement Clarke, John Ruhrah and G. M. Linthicum appeared before the Finance Committee of the Legislature to urge the passage of a bill appropriating \$10,000 to carry on the work of the Medical and Chirurgical Faculty Library.

DR. ARTHUR GUZMAN of Autofagasta, Chile, is spending some time in Baltimore, studying.

AT the time of this writing we are glad to be able to report that the bill providing for State care of the insane passed through the House of Delegates without a dissenting vote.

DEATHS.

WILLIAM WHITRIDGE, M.D., University of Maryland, '62, at his home in Baltimore, February 6, aged 69 years.

FRANK WEBER, M.D., University of Maryland, at his home in Oakland, Md., February 9, aged 24 years.

WILLIAM C. H. HENKEL, M.D., at his home in Baltimore, January 30, aged 82 years.

WILLIAM H. CLENDENIN TEAL, M.D., University of Maryland, '97, at his home in Baltimore, January 29, aged 36 years.

WILLIAM BEALL, M.D., at his home in Rock Gap, W. Va., aged 89 years.

SAMUEL S. WILTBANK, M.D., at Royal Oak, Md., January 25, aged 82 years.

CHARLES THOMPSON, M.D., University of Maryland, '67, of Middleburg, Carroll county, Md., January 15, of pneumonia, aged 68 years.

WILLIAM P. COMPTON, M.D., Georgetown University School of Medicine, '89, in Washington, February 1, of neuralgia of the heart.

THOMAS A. R. KEECH, M.D., University of Maryland, '56, at his home in Washington, D. C., January 31.

MARRIAGES.

JOHN I. PENNINGTON, M.D., University of Maryland, '69, to Miss Blanche Bantz, both of Baltimore, February 17.

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Book Reviews.

SPONDYLOTHERAPY, SPINAL CONCUSSION AND THE APPLICATION OF OTHER METHODS TO THE SPINE IN THE TREATMENT OF DISEASE. By Albert Abrams, M.D., F.R.M.S., Consulting Physician to the Mount Zion and French Hospitals, San Francisco. Illustrated. San Francisco: The Philopolis Press, 1910.

In this interesting treatise the author traces a great many apparently independent diseases to disease of the spinal cord in its various regions. Not only are spinal tendernesses thus minutely localized, and numerous neuralgias, but many disorders also of the heart, lungs, stomach, liver, spleen, uterus and kidneys. A chapter is devoted to the therapeutics and diagnosis of pain. The author attempts to show how these manifold disturbances of health can all be relieved by applications to the spinal cord and the nerves. A prominent agent is hammering vigorously on different parts of the spine and freezing the skin over various segments thereof. For instance, in one case he cured a man, aged 53, of whooping cough and aneurysm of the aorta in 12 treatments by hammering over the seventh cervical vertebra. Even though doubting some of the author's conclusions, a reader may cull from the volume many useful facts. The attempt of the author to gain a more exact comprehension of disease processes as yet very chaotic is certainly most commendable. The printer's work is unusually good.

MANUAL OF OPERATIVE SURGERY. By John Fairhairn Binnie, A.M., C.M. (Aberdeen), Professor of Surgery, Kansas State University; Fellow of the American Surgical Association; Membre De La Societe Internationale De Chirurgie. Volume II. Fourth edition. Revised and enlarged, with 550 illustrations. Philadelphia: P. Blakiston's Sons & Co. Flexible leather. \$3.50 net. 1910.

The second volume of Binnie's "Operative Surgery" is just off the press, and is gotten up in the same inimical style of the first. As in the former volume, the milk of the cocoanut is given without an unbearable amount of garnishings. Succinctness is the keynote of the volume, which makes possible the inclusion of a large number of operations with a minimum amount of wasted mental energy to the reader. The contents include chapters on arteriorrhaphy; operations on veins, ligations of arteries in continuity; operative treatment of simple fractures, compound or open fractures, fractures malunion; osteomyelitis; tumors of bone, osteotomy bow-leg; congenital luxation of the hip, operations on the knee-joint; on the patella, dislocation of the astragalus, union, elbow operations, operations for infective lesions of the hand, amputations and disarticulations, tendon sheaths and tenorrhaphy, tendon transference or transplantation, tenotomy, etc.

The reviewer cannot recommend this production of Dr. Binnie's too highly. It is a little gem, and will be found by instructors in operative surgery, surgeons, both beginners and old stagers, a re-

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liable guide in the subjects included within its pages; in fact, I believe it will be found as absolutely indispensable by the progressive surgeon as the first volume. The presswork is fine, the print clear and bold, the illustrations excellent and numerous, and, above all, the contents in such a form as to enable the reader to obtain his information quickly and accurately. No better book of its kind and scope has ever been produced. It is of such a form and size that it can readily be slipped into one's pocket. The reviewer takes great pleasure in commending this volume to the medical profession.

A SYSTEM OF CLINICAL MEDICINE, DEALING WITH THE DIAGNOSIS, PROGNOSIS AND TREATMENT OF DISEASE FOR STUDENTS AND PRACTITIONERS. By Thomas Dixon Saville, M.D., London. Physician to the West End Hospital for Diseases of the Nervous System; Physician to St. John's Hospital for Diseases of the Skin, London; formerly Medical Superintendent of the Paddington Infirmary; Medical Officer of the Paddington Workhouse, and Post-Graduate Lecturer to the London Post-Graduate Association; Assistant Physician and Pathologist to the West London Hospital; Examiner in Medicine and Clinical Medicine in the University of Glasgow, and Medical Officer to the Royal Commission on Vaccination. Second revised edition. Revised by the author, assisted by Frederick S. Langmead, M.D., London; Casualty Physician to St. Mary's Hospital; Assistant Physician to the Seamen's Hospital, and Physician to Out-patients at the Paddington Green Children's Hospital, and Agnes F. Saville, M.A. (St. And.), M.D. (Glasgow); Assistant Physician to the St. John's Hospital for Diseases of the Skin. New York and London: Longmans, Green & Co. Cloth. 1910.

There are so many excellent systems of medicine on the market that there would seem to be no room for another. Nevertheless, notwithstanding this fact, Saville's book has its place in medicine, and is a distinct addition to medical literature. The book is well written, excellently illustrated, and contains within its 930 pages many little subchapters on such subjects as sudden death, breathlessness, emaciation, dwarfism, etc. Our only criticism is that Dr. Saville endeavors to embrace too many specialties within the confines of his volume, many of which are better treated in separate volumes. It seems to us that gynecologic affections are more or less out of place in a book of general medicine. Certainly an internist is not competent to record the latest procedures and best lines of treatment in such broad specialties as nose and throat, gynecology, etc.

His idea of the etiology of rheumatoid arthritis coincides with the modern conception of this obscure affection; namely, that it is infectious in character, and that dental caries, ulcerating piles and septic conditions of the nose and throat, etc., act as infecting foci. There is a chapter of some 50 pages on the commoner diseases of the skin, and quite an extensive one on the affections of the nervous system. The chapters on diseases of the heart and lungs are mod-

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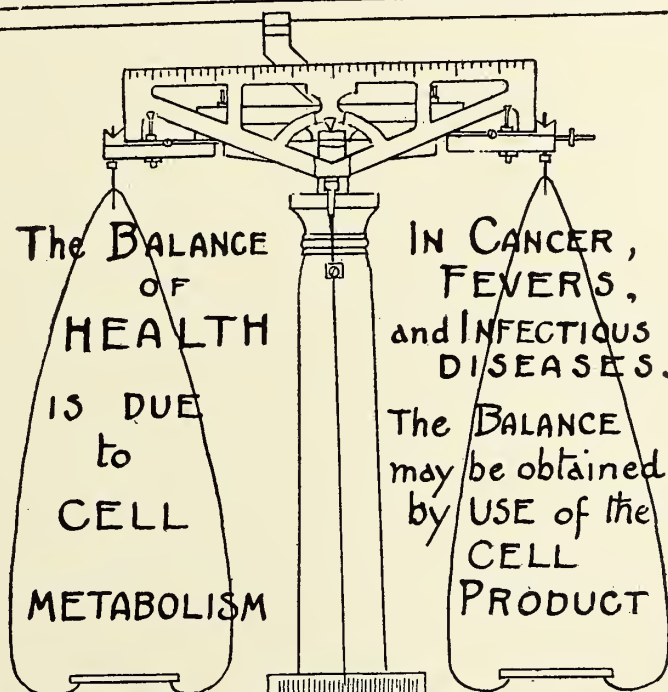
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ern in their tone, full and well written; in fact, the book as a whole is concise, well written, modern, up-to-date and quite original in its scope, in that he approaches his subject from the standpoint of symptomatology. It should be of immense aid to students and general practitioners in their work.

DIAGNOSTIC THERAPEUTICS. By Albert Abrams, A.M., M.D., Consulting Physician to the Mount Zion Hospital and the French Hospital, San Francisco; formerly Professor of Pathology and Director of the Medical Clinic, Cooper Medical College (Medical Department of Leland Stanford Junior University), San Francisco. 198 illustrations; 1014 pages. A Bibliography and Index. Cloth, \$5 net. New York: Rebman & Co. 1910.

The gist of the book, its object and purpose, is to impress upon the practitioner the part therapeutics plays and can be made to play in the diagnosis of disease. So far as we are aware this is the first pretentious volume based upon therapeutics as an adjunct to diagnosis founded upon scientific methods. As an index to the nature of the volume the author adopts the motto, "*Naturam morborum ostendunt curationes*" ("Cures show the nature of diseases"). The author is not a diagnostic nihilist, and does not ignore the many valuable diagnostic measures, both old and new, which we have at our command in determining the character of disease processes, but simply desires to impress upon the profession the data which can be gained from therapeutic remedies as a part and parcel of our diagnostic armamentarium. He desires simply to make a succinct record of the employment of drugs in diagnosis. The volume is neither a work on diagnosis nor therapeutics, but an attempt to co-ordinate the one to the other. Strictly speaking, it may be designated as a work on diagnostic pharmacotherapy. In the index he tritely says: "Unfortunately, therapeutic nihilism dominates scientific medicine, and pharmaco-therapeutic results are attributed to suggestion or to some other recondite factor. The fact is that experimental pharmacology has migrated too far afield from the clinic. Many of the observations of the clinician are rejected by the laboratory pharmacologist unless accompanied by proof tantamount to a chemic reaction. If such scientific control is permitted, we must with equal reason exclude from our nosology all functional diseases, because the pathological anatomist cannot find lesions to explain the symptoms. The crucial test for the action of drugs is in their clinical application."

The mistakes in diagnosis he attributes to the following causes:

1. Incomplete or careless examination.
2. Misinterpretation of symptoms due to errors in judgment.
3. Ignorance of the methods of examination.
4. Prejudiced preconception.
5. Incompleteness of medical diagnosis.
6. Placing too much reliance on the results of the treatment.
7. Incomplete history of the patient and the incomplete development of the symptoms.
8. Simulation or dissimulation on the part of the patient.

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of allowing no organ of the body to escape examination will do much to prevent errors in diagnosis. He goes on and states that, with our present-day refined methods of diagnosis, with the patient as an object of clinical dissection, every available resource is utilized, and the skilled diagnostician must be an adept in bacteriology, laboratory methods, etc. He is of the firm conviction that the time is fast approaching when medical men will be differentiated as diagnosticians and therapeuticians, for the former will have neither the time nor the inclination to treat the sick. According to him, the genesis of therapeutic nihilism was contemporaneous with augmented refinement in diagnosis, and it is safe to assume that if as much skill had been expended in advancing therapeutics as has been done to abet diagnosis the periodic psychic infection, faith healing, would not have come into existence.

He gives sections on drugs and food in the etiology of disease which will well repay a careful reading. Then follows some 150 pages devoted to drugs in diagnosis. It is this chapter that is the milk in the cocoanut, and much useful knowledge and interesting reading is to be found.

The remainder of the volume is devoted to methods other than drugs in the diagnosis, etiologic-diagnostic-therapeutics, the diagnosis of visceral sufficiency, etc.

Dr. Abrams has produced a book along new lines, a thoughtful philosophical exposition of a much-neglected subject. The text is presented in plain, charming English, and deals with a unique aspect of medicine. The work is well worth a careful perusal, especially by general practitioners and teachers of materia medica, therapeutics and medicine.

ESSENTIALS OF CHEMICAL PHYSIOLOGY. By W. D. Halliburton, M.D., LL.D., F.R.S., Fellow of the Royal College of Physicians; Professor of Physiology in King's College, London; Author of "Textbook of Chemical Physiology and Pathology." Seventh edition; abundantly illustrated. New York: Longmans, Green & Co. Cloth. 1909.

The present volume consists of 280 pages of applied chemical physiology. Prof. Halliburton is an authority upon this subject, and what he puts in print has the impress of his own personal investigations. The contents are divided into two main subdivisions—elementary course and advanced course. In the elementary section are discourses on "The Elements Contained in Physiological Compounds," "Some Typical Organic Compounds," "The Carbohydrates," "The Fats and Lipoids," "The Proteins," "Foods," "The Digestive Juices—Saliva, Gastric;" "Pancreatic and Bile Digestion," "The Blood and Respiration," "Urine." The advanced course, amongst other subjects, considers "Carbohydrates," "Crystallization of Proteins," "Milk," "The Proteoses," "Hemoglobin and Its Derivatives," "Serum," "Coagulation of the Blood," "Urea and Chlorides in Urine." There is also an appendix of some 50 pages given over to the descriptions of the hemacytometers, hemoglobinometers, polarization, polarimeters, colloids and colloidal so-



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lutions. As indicated above, "chemical physiology" is extremely practical. Physiological phenomena of practical use in the diagnosis of disease are thoroughly treated, and directions for the carrying out of chemical tests necessary to elicit those phenomena are accurately described. The book is an extremely useful and handy little volume for teachers, practitioners and students. It abounds with useful information, and, withal, is written in such plain, terse English that there is no mental effort on the part of the readers in arriving at the meaning of the author.

EARLY DIAGNOSIS OF GALL-STONE DISEASES.*

It is not my purpose to speak of the classic symptoms of gall-stone disease in its final, sometimes hopeless, stages. With these we are familiar. The average textbook describes terminal stages and deadhouse findings to the serious detriment of the patient. There is, relatively speaking, no such thing as symptomless stone in the gall-bladder. If we inquire carefully into the past history, we will find the symptoms in abundance. We had as well speak of a symptomless stone in the urinary bladder as in the gall-bladder. Neither gall-stone colic nor jaundice are at all necessary to the diagnosis of gall-stone disease. The sooner we get over this fallacy the better it will be for our patients. The very earliest symptoms are often quite trivial in character and frequently referable to the stomach. There is a feeling of fullness, weight or distention in the epigastrium. This is both persistent and annoying. It is generally relieved by belching, and vomiting gives complete relief. Relief may be given by bending the body forward, by loosening the clothing, or by flexing the thigh or the body. There is at times a little pain in the gall-bladder region; at times a respiratory effort is cut short by a sudden, stabbing pain. There may be a slight chilliness in the evening, with a goose-flesh feeling of the skin. These symptoms have often gone unrecognized. About every fourth woman past middle age and a few less men have gall-stones.

By constant care as regards the diet, hygiene and the use of laxative mineral waters it is often possible for these patients to keep in a condition of comparative comfort. But if we wait, numerous retrograde changes may take place in the liver, gall-bladder and pancreas. When the time for operative treatment becomes imperative the mortality risk is high and the technique of the work difficult. The early operation is easy, safe and prophylactic. The question of removal of the gall-bladder or its drainage is largely dependent on the practice of the individual operator as to whether he is inclined to operate early or late. The man who operates early will be able to cure most of his cases by simple drainage, while the one who waits for terminal stages will find his pathology so serious that removal rather than repair will be often an imperative indication.

*John Egerton Cannady, oration on surgery before West Virginia Medical Association at Elkins, October, 1909.

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THE DIAGNOSIS AND TREATMENT OF TUBERCULAR PERITONITIS.*

By Randolph Winslow, M.D., LL.D.,

Professor of Surgery in the University of Maryland, Baltimore, Md.

TUBERCULAR PERITONITIS may in isolated instances occur as a primary lesion, but in practically almost all cases it is secondary to tuberculous disease elsewhere, and most frequently the primary focus is situated within the abdominal or pelvic cavities or in close relation to them, though this is not always true, as metastases may occur from the lungs, bones, lymph glands and other more or less remote structures. In young children the infection often proceeds from the intestines and mesenteric glands, in women from the uterus and Fallopian tubes, whilst in both sexes it may result from tuberculosis of the appendix, cecum, intestines and urinary organs.

The disease may occur as an acute miliary tuberculosis, which is not amenable to surgical treatment, and but seldom comes under the surgeon's care; or as a subacute or chronic process, which is frequently greatly benefited and often cured by surgical means; and clinically, for practical purposes, tubercular peritonitis may be divided into the ascitic form, where there is more or less free fluid in the peritoneal cavity; second, the plastic or adhesive form, where there is but little fluid and marked adhesions of the intestines and other abdominal viscera; and, third, the ulcerative and suppurative form. No age is exempt from this disease, and it occurs at both extremes of life, though the largest number of cases are found between 20 and 40 years of age. I have records of more than 30 cases occurring at the University Hospital, a number of them under my own care, from which I learn the youngest patient was 3 years of age and the oldest 55. In my cases the proportion of white to colored is about equal, but it is said to be more common in America in the negro race. It occurs more frequently in females than in males. In my series 20 were females and 13 males. It usually occurs as a diffuse process, but in some cases a circumscribed collection of fluid occurs, which has been frequently mistaken for ovarian cystoma. Such a case came under my own observation, where a large cystic swelling was found in

*Read before the Baltimore City Medical Society March 4, 1910.

the middle line of the abdomen, simulating an ovarian tumor, but when incised was found to be an encapsulated collection of fluid due to tuberculous peritonitis. Spencer Wells observed this condition in 1862, operated on the patient by laparotomy, and the woman was alive and well 22 years subsequently.

Symptoms and Diagnosis.—Tuberculous peritonitis may present many diverse symptoms, or in some cases there may be no symptoms sufficient to arouse suspicion, and the affection is discovered accidentally during operations for ovarian, tubal or other abdominal lesions. An example of this character came under my personal observation some 20 years ago in the case of a lady about 40 years of age who was operated on for ovarian cyst by my colleague, Dr. John G. Jay, at the Hospital of the Good Samaritan. When the abdomen was opened the peritoneum was found to be inflamed and covered with a huge crop of miliary tubercles. She made an uneventful recovery, but contracted grippe a year later, followed by pneumonia, terminating in phthisis, from which she died.

Sometimes this condition is first learned during an operation for hernia, as in a case occurring at the University Hospital in the service of Dr. Frank Martin.

Generally, however, the symptoms are fairly characteristic, and in some cases the onset is so violent as to suggest appendicitis, strangulated hernia or other abdominal crises. There is usually malaise, often pain or distress in the abdomen, tenderness on pressure, digestive disturbance, nausea and vomiting, some elevation of temperature or irregular or subnormal temperature, sometimes chills and night sweats, weakness and emaciation. The bowels may or may not be affected. In most cases free ascitic fluid will be detected at a comparatively early period, which may be in considerable amount, whilst in a small number of cases the fluid may be encapsulated and simulate cystic tumor of the ovary or uterus. The abdominal walls are usually more or less rigid. Often there will be found evidence of lung involvement, or of pleural effusion, or glandular or bone disease. Sometimes a tumor mass or lump may be felt, which may be rolled-up omentum, or mesenteric glands, or agglutinated coils of intestines, or encapsulated collections of ascitic fluid. The urine is frequently of high specific gravity and scanty, or may or may not contain albumen and casts. The leucocyte count is variable—from 7000 per cubic millimeter to 20,000. The hemaglobin is usually lowered. Sometimes there is pigmentation of the skin. When the disease begins insidiously, and there is a low, continuous fever, with some tympanites and tenderness, typhoid fever may be suspected. In a case of this character, with a positive Widal reaction, typhoid was thought to be certain, and an operation was done for supposed perforation. The condition was then found to be one of extensive tubercular peritonitis, with miliary tubercles scattered thickly over the intestines and peritoneum. He made a good recovery and was well when I last saw him eight years after the operation. In this case it was subsequently learned that he had had typhoid fever three years previ-

ously, which caused the Widal reaction. In cases of doubt tuberculin should be injected to obtain its reaction, or the ascitic fluid may be injected into guinea pigs, though this method is too slow when the case is one demanding prompt operation.

In fact, with the symptoms just mentioned, the diagnosis is usually easy, but, as has been said, it may sometimes simulate typhoid fever, but the temperature chart will usually differ from that of typhoid, and the Widal reaction is usually negative in the tuberculous process, and always so if the patient has not had a previous attack of typhoid fever. The acute infections of the gall-bladder, appendix, kidneys, pelvic organs of the female and the ordinary pyogenic forms of peritonitis must all come in for consideration in making a diagnosis of tuberculous peritonitis. Diffuse intra-abdominal carcinoma may also cause symptoms simulating those of tubercular peritonitis, but usually occurs at a later period in life.

Of 500 cases of tuberculous peritonitis collected by Wunderlich 68 per cent. were of the ascitic form, 29 per cent. of the adhesive, 4 per cent. of the suppurative form. Now, as these forms vary in frequency, so also they vary in gravity and in amenability to treatment.

Prognosis.—The prognosis of tubercular peritonitis, whilst grave, is by no means hopeless in a large number of cases even without surgical treatment. The exudative form presents the most favorable prognosis, the adhesive form a less favorable one, and the suppurative form is usually fatal. The encysted types also are favorable for recovery under surgical treatment.

Treatment.—The acute miliary form, which is a manifestation of a general systemic infection, is not suitable for surgical treatment, and should receive medical and hygienic handling. The fibrinous or adhesive forms, if treated surgically, also usually terminate fatally, and there is great danger that fecal fistulæ may form and never heal, and the ulcerative and suppurative form of the disease likewise is unfavorable for surgical treatment. But, as a matter of fact, the different forms are not sharply differentiated from each other, and very frequently are associated with the ascitic variety of the disease. It is the exudative or ascitic form of tubercular peritonitis that is especially amenable to cure by surgical operation. Laparotomy, with the evacuation of the fluid, even when nothing more is done, and the incision closed, is frequently followed by an arrest of the morbid process, no further accumulation of ascites taking place, and in a very large proportion of cases a permanent cure occurring. This proportion of marked benefit and of permanent cure reaches from 50 to 75 per cent. Why opening the abdomen exerts such a beneficial influence on the tubercular lesions is not understood. Whether it is the effect of light and air, and, if so, how it exerts this beneficent action, is not known. Certain it is that in a large proportion of cases great benefit follows operative methods, which should, however, be combined with such general and hygienic treatment as is found

efficacious in other forms of tuberculosis. In most cases it is not wise to drain the peritoneal cavity, as there is not only increased danger of pyogenic infection, but the track of the drainage tube is liable to become tuberculous and to form an incurable fistula. In suppurative forms, indicating a mixed infection, drainage must be employed in connection with the postural method. Whilst simple incision, with evacuation of the fluid, is often followed by good results, we must remember that very frequently the peritoneal invasion is dependent upon a strictly local primary focus, which is usually the Fallopian tubes in women and the appendix and cecum in both sexes, and we should so plan our incisions that we can explore these regions, and if the structures mentioned are involved, they ought in most instances to be removed. Dr. Wm. J. Mayo first called attention to the fact that benefit frequently follows operation, only to be followed by a relapse, and this is due to a reinfection of the peritoneum from tuberculous uterine adnexæ or other foci. When the primary foci were removed and the constant reinfection stopped, permanent cure resulted in his hands in 25 out of 26 cases. The best incision, therefore, in females is that in the median line, as it enables us to reach the pelvic organs for exploration, and, if necessary, for removal, whilst the right lateral incision offers the best opportunity for exploring and removing the infections emanating from the appendix and cecum in males. Attention has already been called to the fibrinoplastic or adhesive forms of tubercular peritonitis, which are not so susceptible to benefit from surgical measures as the ascitic form, but are also sometimes benefited by laparotomy. Whether associated with ascites or not, if the intestines are matted together, it is not safe to attempt to unravel them, as the bowel is liable to be torn or fistulæ of a persistent character to form. It is in this form of the disease that intestinal obstruction sometimes occurs, which may in some instances be overcome by an entero-anastomosis, though it usually terminates fatally. Local encysted collections of fluid ought to be incised and evacuated.

I have records of 33 cases diagnosticated as tubercular peritonitis, but in most instances the histories cease with the discharge of the patient from the hospital, and nothing further is known of them. Of the 33 cases, seven were not operated on, and three of these died in the hospital and the others left the hospital unimproved.

Twenty-six cases were treated by laparotomy. Of these, 20 recovered from the operation and 6 died. Five of the 20 are regarded as cured, 13 as improved and 2 were discharged unimproved. It is probable that a number of those who were discharged improved subsequently recovered.

My personal experience of indubitable cases consists of five treated by laparotomy. Of these, three recovered and are well—in one case eight years after the operation; two left the hospital improved, and are well, one and a half years after the operation; one left the hospital improved, but died subsequently at her home,

and one died of intestinal obstruction at his home a month or more after he left the hospital.

A case operated on by Dr. J. Mason Hundley in 1899 remains well 10 years subsequently, and a young lady, aged 19, operated on by Dr. St. Clair Spruill in 1906, remains well, has since married and given birth to a child.

The number of cases here recorded is too small from which to generalize, but when we consider that it is usually the serious cases that are submitted to laparotomy we must be convinced that the opening of the abdominal cavity and the removal of the primary focus of infection, when possible, is followed by very beneficial results.

CONCLUSIONS.

1. Some cases of tubercular peritonitis undoubtedly recover without surgical intervention, but there is always the doubt as to the correctness of the diagnosis.

2. Not all cases are appropriate for surgical operation, but great benefit and permanent cure follows laparotomy in at least 50 per cent. of suitable cases.

3. The cases in which there is free fluid in the peritoneal sac, with little or no evidence of disease elsewhere, are best treated by surgical methods.

4. The adhesive forms sometimes are cured by laparotomy, but in a much smaller proportion of cases.

5. After the patient has been subjected to surgical treatment, all other measures of a hygienic, climatic and medicinal character that have been found useful in pulmonary tuberculosis should be employed.

AN ENGLISH HANDBOOK TO THE PARIS MEDICAL SCHOOL, WITH MAP. By A. A. Warden, M.D., Visiting Physician to the Hertford British Hospital, Paris. Second edition. Fifty cents. Philadelphia: P. Blakiston's Son & Co. 1910.

This guidebook to the Paris Medical School should be very useful to prospective visitors to Paris. The frontispiece is a map on which is depicted the hospitals of Paris and their exact location. This feature of the book alone should render it well worth the price, namely, 50 cents. Included in the pamphlet is the name of each hospital, the means of reaching it and its exact location in the city. The little volume also makes available for the first time much information concerning the Paris Medical School, the museums and libraries, medical societies and their meetings, the practice of medicine in France, the Continental Anglo-American Medical Society, and a vast amount of other important information to the visitor to France, such as the various details associated with medical study in Paris. It is compact, well written and fulfills a long-felt want.

JOHN HUNTER.

(1728-1821.)

THIRTEENTH OF A SERIES OF ESSAYS ON THE HISTORY
OF MEDICINE FROM THE EARLIEST TIMES.

By H. M. Cohen, M.D.

CHAPTER XIV.

IN the annals of all medical history there is perhaps no other man who combined so varied a catalogue of attainments in the same individual as did John Hunter.

He was as familiar with the secrets of anatomy and surgery as he was with those of physiology and natural history, and he succeeded during his lifetime in placing himself at the very head in each branch he interested himself.

In anatomy we find him without a peer in his generation. Dissection of the human cadaver was to him a most delightful pastime, and in the 33 years of a life full of hard work he found time to dissect some hundreds of bodies.

As a naturalist, his field of experiment extended from the study of a small bee to the dissection of a gigantic whale.

As a surgeon and physician, he proved one of the most successful practitioners in London, and with it all he found time to deliver a series of the most remarkable and able lectures of his period.

John Hunter was born at Long Calderwood, a small estate seven miles from Glasgow, on February 13, 1728, and was the last of 10 children.

As a boy he showed small liking for learning, and proved rather more backward than other youths of his age. His father, being at the time old and enfeebled by disease, and his mother perhaps a little overly fond of her youngest child, there resulted a laxity in discipline for the lad, which went toward making him a much-petted and spoiled youngster. Fretful and overindulged, he acquired the habit of expecting every attention, and if at times he was opposed in his childish desires, he would cry until his whim was gratified.

However, he was by no means a stupid boy, and occasionally proved himself, in his youthful doings, an exceedingly bold little fellow.

For a short period he was placed in a Latin school at Kilbride, but making little progress there, he was brought home.

The death of his father found him a large, idle boy, whose education consisted principally in a knowledge of the whereabouts of every birds'-nest in the neighborhood, and he could relate, with the greatest accuracy, the number, size, marks and peculiarities of the eggs they contained. If there had been an ant, bird, bee or

tadpole in the vicinity, he was sure to know of it. But when it came to books, John was all at sea.

At the age of 17 he was sent to Glasgow to live with a relative, but soon returned home, having profited but little by his sojourn in the Scotch city, and at 20 he wrote to his brother William, who was then a famous anatomist in London, threatening to enter the army, unless he should be permitted to join him in his work. In 1748 the two brothers—the one already famous and the other to prove so later—joined hands.

At last the unsettled youth had found his proper sphere. He took up the work of dissection with an enthusiasm that surprised even his brother William. He began it at daybreak, and only ceased when the sun had set. He was soon made demonstrator to the students at the little, unendowed private school of William Hunter, and through the latter's influence he obtained permission to see something of Chelsea and St. Bartholomew's Hospitals, thus being able to follow the work of Chelselden and Percivall Pott, two very eminent surgeons of the time.

Having acquired a liking for surgery, in 1754 he entered St. George's Hospital as a surgeon's pupil.

Hunter's education was still of a very limited character, and, hoping to improve him in this particular, his brother William persuaded him to enter Oxford. A few months at this famous institution sufficed for John, and he once more returned to London, where he obtained the appointment of sole House Surgeon at St. George's Hospital, only, however, to resign some five months later.

In 1759 young Hunter developed an affection of the lungs, and was advised to leave London and his dissections for a more wholesome atmosphere. An appointment as Staff Surgeon in the Army was obtained for him, and he was soon wearing his country's uniform. Like his eminent predecessors, Theophrastus, Sydenham, Harvey and Ambroise Paré, Hunter followed the colors, and, as Army Surgeon, he obtained an insight into surgery that greatly worked to his advantage in civil life. His soldier's experience resulted, later in life, in the publication of a "Treatise on the Blood; Inflammation and Gunshot Wounds."

After two years of active service, in which he had seen considerable military and naval warfare, he returned to London, and at the age of 35 he opened an office in Golden Fleece Square.

But he found it uphill work. Although he had already put in something like 12 years in the metropolis, he discovered that, while off to the wars, he had lost the standing he had enjoyed previous to his departure, and it was necessary to begin once more at the very bottom.

His income, as a half-pay officer, was barely sufficient to cover his most urgent expenses, and finding that he had a great deal of time on his hands, he started a course in dissection. He taught

anatomy to a number of students, and at the same time carried on his experiments in pathology and physiology.

His practice at first progressed slowly, the neighborhood regarding him more in the light of a scientist than surgeon. His advanced age and temperament rendered him too impatient to pander to the whims of all sorts and conditions of people with whom he came in contact, and as a consequence his income, including that from his students, was barely enough to keep him in practice.

He was a passionate anatomist, and even surgery to him appeared subordinate to it in importance. His neighbors believed that it would be his greatest delight to dissect any one of them, and were, consequently, slow in applying for his medical services.

His colleagues looked upon him as a most able anatomist, but did not attach the importance to that science which the profession does in this day.

But a man of Hunter's attainments was bound to ultimately succeed in practice, and in 1764 he found his house in Golden Fleece Square already too small for his great activities. Patients found him out, and his income enabled him to purchase Earl's Court, a place about two miles from London, which he arranged for his work in anatomy and physiology and as a miniature menagerie, for he had already given full sway to his childhood's love for all animal life.

His income at this period must have been quite large, for he stocked the Earl's Court structure with a veritable Noah's Ark. In it he had a supply of ducks, geese, pigeons, pigs, rabbits, opossums, hedgehogs, jackals, zebras, ostriches, buffaloes, leopards, dormice, bats, snakes, fishes, frogs, eels, river mussels, leeches and numerous other varieties of the things of the air, earth and water.

In this place he conducted experiments without number, and his dissections were only limited to the time he could take from his practice and the subjects that he could gather in "by hook or by crook." Here he dissected the 17-foot whale and the famous Irish giant, O'Brien.

Hunter, hearing that the big Irishman was in poor health, ordered his man Howison to keep close watch on him, so as to be near at hand when the giant should die. O'Brien, being in mortal fear that his mighty body would ultimately fall into the hands of Hunter, gave strict directions that upon his death a careful watch be kept over his body both day and night until a leaden coffin could be made, and he be then thrown into the sea. O'Brien finally died, and, in accordance with his request, the undertaker engaged the necessary watchers. This was reported to Hunter, and he at once set out to find the men. He offered them 50 pounds if they would allow the body to be kidnapped. They demanded double the amount. To this he readily consented, but, finding him so anxious in the matter, the two rascals kept raising the sum until they brought it up to 500 pounds. This was finally agreed upon,

and having borrowed the money, Hunter had the corpse transferred to his own carriage and then conveyed to Earl's Court.

Looking at this incident strictly from the standpoint of science, it speaks worlds for the marvelous passion of anatomy possessed by Hunter to have paid the sum of 500 pounds for the opportunity of dissecting one body!

Hunter was 40 years old when he was elected Surgeon to St. George's Hospital, where he was given his first real opportunity to display his great aptitude as a surgeon. A year later he became a member of the Corporation of Surgeons.

In 1771 he married the beautiful and charming Miss Home, daughter of Surgeon Robert Home of Burgoyne's Regiment of Light Horse. About two months previous to this event Hunter had published his "Treatise on the Natural History of the Human Teeth," and it is stated that his wedding expenses were paid from the profits of this work.

The house in Golden Fleece Square was no longer suitable for his increased standing. His brother William having moved to Great Windmill street, John Hunter took the vacated structure on Jermyn street, and the place became a rendezvous for noted musicians, artists and writers, with whom Mrs. Hunter delighted in surrounding herself, being a clever and agreeable woman and fond of society. It was of one of these gatherings that the story is told that Hunter, having unexpectedly returned home one evening after a hard day's work, and finding the drawing-room filled with a large concourse of people, he became very much irritated. Stepping into the center of the room, he addressed the guests as follows:

"I know nothing of this kick-up, and I ought to have been informed of it beforehand, but as I am now returned home to study, I hope the present company will retire." The story runs that the house was soon emptied.

Hunter's home life, however, seemed an ideal one. Mrs. Hunter possessed a great deal of charm of manner, and in many of his letters he fondly mentions her name.

She was 14 years his junior, and bore him four children. In later years she displayed great skill as a poet, and was the authoress of "My Mother Bids Me Bind My Hair," which was set to music by Haydn, and she also wrote the words for Haydn's "Creation."

Notwithstanding an enormous practice, Hunter found time to carry on an almost limitless number of experiments and dissections, and at the same time to prepare and deliver a long series of lectures. These included all branches collateral with surgery, and far excelled anything that had as yet been attempted.

Home declares that Hunter always took 30 drops of laudanum before the first lecture of each series to overcome his great diffidence, not being able, otherwise, to master the inevitable attack of "stage fright." But once well started in the work, he went from subject to subject freely and clearly.

There was little in his lectures on the Principles of Surgery to appeal to the ordinary untrained student, for the practical parts of the subject were sacrificed to an exposition of embryotomy, physiology and animal chemistry.

These branches had not yet become a part of the ordinary medical curriculum, and, therefore, were quite above the heads of many. Nevertheless, their elaboration and development by such a trained thinker as Hunter brought to him a constantly-increasing number of auditors, especially as actual worked-out specimens were constantly exhibited to illustrate the salient points of each lecture.

The thoroughness of his teaching resulted in producing a number of brilliant minds, for his students included such well-known names as Abernathy, Jenner, Carlisle, Cline, Coleman, Astley Cooper, Home, Maccartney and Philip Syng Physick, the "Father of American Surgery."

Ottley calls attention to Hunter's habit of changing opinions. Astley Cooper inquired of him, at one of his lectures, if, upon a previous occasion, he had not expressed an opinion directly opposed to the one he had just announced. "Very likely I did," he replied, "I hope I grow wiser every year." To one of his pupils who remarked the same fact, he declared: "Never ask me what I have said or what I have written, but if you will ask me what my present opinions are, I will tell you."

Once he cautioned his students "not to write down that observation, for, very likely, I shall think differently next year," and upon another occasion, toward the end of a lecture, he paused and said: "Gentlemen, I think you had better omit what I have been saying; the fact is, I had an idea when I wrote down this, but I have lost the train of thought connected with it, and I cannot now recall it."

Hunter's skill as a surgeon rapidly increased his income after the first 10 years. Up to that time his practice had not amounted in all to 1000 pounds, but on his eleventh year it had reached an equal sum in 12 months. It was not much later that he was earning \$25,000 annually, but, with it all, he was laying little aside. With his increased income came a continually growing addition to his already large collection, until it amounted to something like 70,000 pounds in value. He finally found his Jermyn street house too small to contain the great number of medical and other curios, and he built a structure after his own plans on the east side of Leicester Square, which operation cost him 6000 pounds, a sum far in excess of what it was actually worth.

He conducted three separate establishments. Leicester Square, where he resided and stored the great collection of chemical, embryological and physiological specimens; the Castle street house, where he did his anatomical dissections; and Earl's Court, where he had his gardens and menagerie. At all of these establishments he employed and provided for something like 50 persons daily.

All the funds for this great outlay came from his practice, which

must have taken up considerable of his time. Yet, he observed a strict routine in his daily work.

Before six in the morning he was already at his dissecting. At nine he breakfasted, after which he saw patients at his house till 12, when he promptly set forth on his daily rounds. This was an invariable rule with him, whether or not there were any patients still waiting to consult him. At four he dined, after which he took an hour's nap, and spent the remainder of the evening preparing for his lecture or working with his amanuensis. When the family retired at 12, he remained for one or two hours longer at his work. He rarely allowed himself more than four hours' sleep and the one-hour nap after dinner.

In 1776 Hunter was appointed Surgeon-Extraordinary to George III, and in the same year he delivered the first of his Croonian lectures on Muscular Motion before the Royal Society, and later, before the same organization, he discussed his observations on the movements of plants.

In 1780 he communicated to the Royal Society a paper "On the Structure of the Placenta," and in 1785 he worked out the well-known operation for aneurism, which was perhaps his most important contribution to surgery. He tied the main artery above the disease, leaving the collateral branches to supply nourishment to the parts beyond the ligature. This operation made Hunter one of the world's great benefactors, and established the principle of anastomosis.

In the following year he brought out his "Treatise on the Venereal Disease," and in 1790, upon the death of his former chief, Adair, he was appointed Surgeon-General and Inspector-General of the British Army. He was already a prominent member in English, French and American medical societies, and upon the death of Pott, in 1788, he was recognized as the first surgeon in England.

Hunter was not always spared the antagonism of his colleagues. He realized the comparative lack of certainty in the medical art, and grew impatient at the reiteration of errors whose only foundation of reliability consisted in their age. And in speaking with Abernathy in this continent he remarked, "I know—I know I am but a pigmy in knowledge, yet I feel as a giant when compared with these men."

Jealousies sprang up in numerous quarters, and he was often compelled to fight for every innovation he expounded.

At an early age he developed symptoms of angina pectoris, and it was no doubt due to these repeated encounters that the disease increased in vigor.

Toward the end of his career he experienced daily attacks, which greatly hampered his work.

On the 16th of October, 1793, he attended a board meeting at St. George's Hospital, where a decision was to be rendered in a controversy which he engaged in with his colleagues relative to some rule of the institution. An argument ensued, in which he

was flatly contradicted. This brought on a final attack of his ailment, and he fell lifeless in the arms of Dr. Robertson.

Hunter belonged to that grand category of men to whom the profession owes so much. They were noble characters, builders, who constructed a foundation upon which we must, in years to come, stand or fall. Life to them was wasted without some valuable contribution to the relief of its ills or some beneficent addition to science. If they were enabled to add but the elucidation of a new thought, however slight, an entire life's work was considered profitable.

Hunter did not begrudge years of untiring labor if by it he could but work out one new anatomical specimen. Late into the night his passion carried him, stooping low over the minute structure of a tissue, oblivious to all the world but his longing for the discovery of an hitherto unknown texture. Indefatigable were his labors, unending his energy.

Notwithstanding his enormous earnings, there was little left after his liabilities were cleared. The Government provided a pension for his widow for the next two years, but she was later compelled to accept a position as companion for a time to Dr. Garthschores' young ladies.

In 1799 Parliament voted 15,000 pounds for the purchase of Hunter's enormous collection, which consisted of 13,682 specimens, and which was taken over by the Corporation of Surgeons. In 1855 a building was opened for it in Portugal street.

The body of John Hunter was first interred in a vault at St. Martin's in the Fields. On March 28, 1859, it was removed to Westminster Abbey, and it was finally deposited in the nave, near the resting place of Ben Johnson.

Mrs. Hunter survived her husband 27 years, retaining much of her wit and charm to the very end. She occupied a small house in Lower Grosvenor street, and died on January 7, 1821, at the age of 79.

Eleven years after Hunter's death the talented widow inscribed the following beautiful epitaph to him:

"Here rests in awful silence, cold and still,
One whom no common sparks of genius fired;
Whose reach of thought Nature alone could fill,
Whose deep research the love of Truth inspired.

"Hunter! If years of toil and watchful care,
If the vast labors of a powerful mind
To soothe the ills humanity must share
Deserve the grateful plaudits of mankind—

Then be each human weakness buried here,
Envy would raise to dim a name so bright;
Those specks, which in the orb of day appear,
Take nothing from his warm and welcome light."

MALPIGHI AND HIS WRITINGS*

By Wm. Royal Stokes, M.D.

Professor of Pathology in the College of Physicians and Surgeons, Baltimore, Md.

IT IS not with the hope of presenting anything new that I have selected this topic tonight, but the presence of a copy of this author's works in the library has prompted me to attempt a brief description of them, with the hope that I may arouse a renewed interest in the writings of this versatile man. Before doing this, however, it may be of interest to mention some points concerning his life.

Marcello Malpighi, or Marcellus Malpighius, was born at Crevalcore, near Bologna, on March 10, 1628. After an uneventful youth spent on a farm, he began the study of philosophy at the University of Bologna in 1645 at the age of 17. Foster, in his "History of Physiology," tells us that his studies were interrupted by several deaths in his family and by the settling-up of the estate, and it was not until 1651 that he again entered the university, having changed to the subject of medicine.

The young medical student soon gained the admiration of Massari, the professor of medicine, and was later admitted into the private club called the *Corus Anatomicus*. This greatly aided him in his studies, and in 1653 he became doctor of medicine and philosophy. He married the sister of Massari, and in 1656 he succeeded his friend and benefactor in the chair of medicine, after the latter's sudden death. He was almost immediately called to the University of Pisa by Ferdinand II of Tuscany, where he assumed the duties of professor of theoretical medicine, or practically physiology. He remained there for three years, and after spending two years again at Bologna, he accepted the call of the Senate of Messina to the chief chair in medicine at the university. During his four years' stay here he began much of his experimental work and many of his observations, but at the end of his term he again returned to Bologna to his old chair, and during the 25 remaining years of his life he completed the many researches which have made his name famous in medicine.

Before considering his various publications, it seems proper to inquire concerning the state of medical knowledge during his time, for medical views were undergoing radical changes.

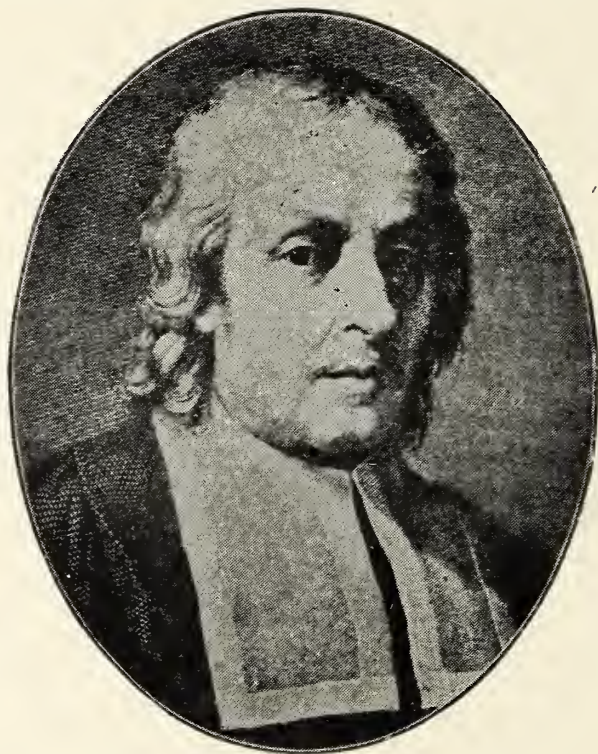
In 1543, about 100 years before Malpighi's entrance at the university, the great "*Fabrica Humani Corporis*" of Andreas Vesalius had been published by Oporinus at Basel. This work placed anatomy on a sure foundation, and the exact anatomical knowledge gained was of great assistance to Harvey, who published his book describing the circulation in 1628.

This great publication caused many opinions to be expressed pro and con, and, as an example of opinions on each side of the controversy, we can examine the theories of Descartes, the founder of modern philosophy, and Giovanni Borelli, the expounder of the iatromathematical and iatrophysical theories of medicine. Descar-

*Read by title at the annual meeting of the Book and Journal Club of the Medical and Chirurgical Faculty, January, 1910.

tes did not accept Harvey's ideas concerning the circulation, and in his work on physiology, called "*Liber de Homine*," he still clung mainly to the Galenic idea that the blood was boiled and vaporized by the intense heat in the heart and was exhaled as a vapor into the lungs. There it met the air, which condensed it and caused it to fall drop by drop into the left side of the heart. Here again the blood was rarified and carried as animal spirits to the brain, or vital spirits to the various tissues.

Borelli had been greatly influenced by the great mathematician and physicist, Galileo, who taught at Padua, and he accepted the true theory of the circulation as taught by Harvey. He and his followers attempted to explain practically all physiology by means of calculations and physical laws, and Foster states that in his great work, "*De Motu Animalium*," he explained the motion of the muscles during contraction by assuming that the muscular



MALPIGHI,
1628-1694.

fibers were chains of rhombs, and that the wedgelike edges caused a sudden inflation of the fibers by their insertion. By means of a mathematical calculation, he also reached the conclusion that the motive force of the heart equaled that of supporting a weight of 3000 pounds and that each heart beat exerted a force of 135,000 pounds.

The science of medicine needed a great genius to place it on a surer foundation, and this want was supplied in Malpighi.

Since we have been discussing the circulation, we can first consider his most important work, "*De Pulmonibus Observationes Anatomicae*," his book on the lungs. Although the true circulation was established, it was not known how the blood got from the branches of the arterylike vein, or pulmonary artery, to the veinlike artery, or pulmonary vein, and the lungs were regarded as

a porous sponge in which the open terminal branches of the bronchi and blood vessels simply hung loose. Malpighi, in his letter to "the most celebrated and erudite man, Alphonso Borelli, the celebrated professor of mathematics at Pisa," describes his discoveries to his old friend and former colleague. This letter describes his work at Bologna and was published in 1661.

After stating that the lung is not like simple flesh or the spleen, he says that it consists of many membranous vesicles in which the branches of the windpipe open, and with which they are continuous. When the lungs are taken out of animals the cut surface shows that these vesicles become less and less turgid with air as the lungs are emptied. Again, when water is forced through the pulmonary artery and comes out of the pulmonary veins, and all of the water is pressed out of the lungs, yet if air be suddenly blown into the lungs through the trachea the vesicles fill up and the lung is perfectly dry. He then draws the important conclusion that the air vesicles are dilations formed at the ends of the tracheal tubes, and this observation destroyed the old fallacy that the ends of the windpipe communicated directly with a space into which the ends of the pulmonary vessels also terminated. It also explained the proper function of respiration, showing that we breathe air into closed sacs, which are the terminations of the bronchi.

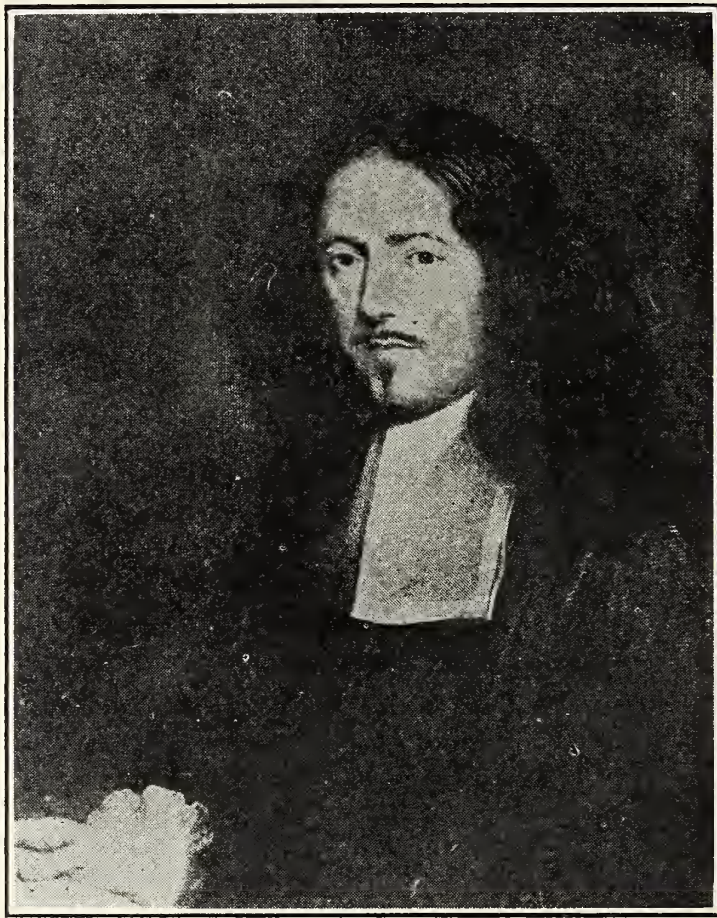
Ending his first letter with an anatomical description of the lungs, in his second letter to Borelli he describes his discovery of the capillaries of the lungs in frogs, opening his description with the words, "*Magnum certum opus oculis video*" ("I see with mine own eyes a certain great work"). This great work consisted in the passage of the blood through a system of closed channels from the arteries to the veins, and he confirmed his opinion by ligating the pulmonary veins and causing a turgescence or dilatation of the capillaries by preventing the flow of blood into the heart. In specimens of dried lungs, after this treatment, he was able to see the distended capillaries and he also saw the blood in live animals passing through the capillaries. This furnished the final link to the theory of the circulation, and the further studies of inflammation, nutrition and blood distribution followed from this great work.

Malpighi was a discoverer and pioneer in many other fields besides physiology, and we can now consider him as an anatomist and histologist. He made many interesting observations concerning the gross anatomy of the brain, liver, kidney and spleen, but his descriptions of the microscopic structure of these viscera are more important. He began many of these investigations while at the University of Messina; but they were not published until he returned to Bologna, in 1666.

In his letter to Fracassato, his fellow-student at Bologna, who succeeded him as professor of medicine at Pisa, he writes about the microscopic structure of the brain, and, after mentioning the opinions of the ancients concerning this organ, he describes the white and gray matter of the cord and brain and then traces the

fibers from the brain to the cord. He discovered the nerve fiber, and in casting about to find the nature of the gray matter he comes to the conclusion that it is of a glandular nature. He writes: "The nature of this gray matter is difficult to determine, for it does not seem solid from hardened red blood, nor does it seem like an organ. * * * It appears softer and more mucoid, and thus to differ from the medulla of the cerebrum." And in his later work on the structure of the viscera he concludes that the cortex consists of numerous groups of glands.

This mistake was a natural one, as Foster remarks, since he had just completed his researches on the other glands of the body embodied in his *Anatomical Exercise Concerning the Structure*



MALPIGHI.

of the Viscera," and which work had been practically completed while at Messina. His discoveries advanced greatly the knowledge of the physiology of the kidney and the liver, about which very crude ideas were held. None knew how such a firm, solid organ as the kidney could drain off the serum from the blood and collect it as urine in the bladder, and the concoction or fermentation of the food absorbed from the stomach and intestines resulted in the formation of the blood in the liver, which was the great blood-forming organ. Spurred on by the discovery of the duct and secretion of the pancreas by Wirsung, the anatomist at Padua, and by the work of Wharton and Stensen on the submaxillary and parotid glands, Malpighi made his classical descriptions

of the minute structure of the liver and kidney, which are the basis of our textbook descriptions today.

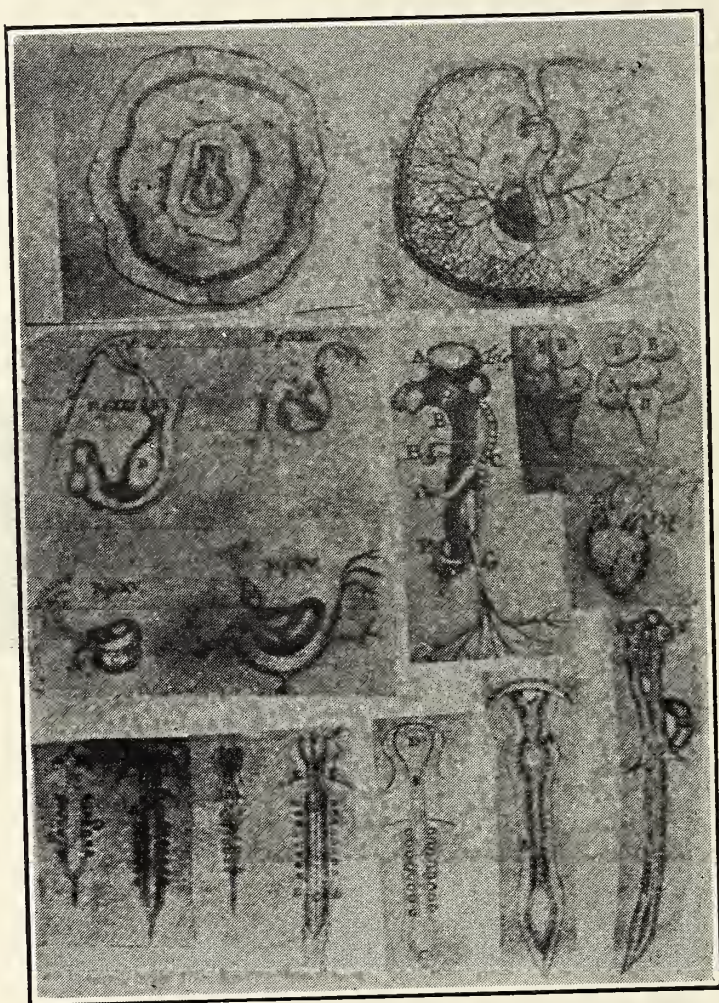
Approaching the subject of the structure of the liver from the standpoint of the comparative anatomist, he described the structure of the lobules, acini, intercellular capillaries, periportal connective tissue and smaller blood vessels in snails, fishes, reptiles, mammals and man, and he noted that the lobules are the terminations of the blood vessels. He speaks of the irrigation of the lobules by the branches of the portal vein, describes the bile ducts leading from the lobules, and concludes that this duct is excretory and that the bile is the true secretion of the liver, destroying the old theory that the bile was secreted by the gall bladder by ligating its duct and the common duct near the duodenum in kittens. The bile duct, of course, soon became turgid with bile. As to the use of the bile, he simply compared it to the mixing of foods of various tastes, thus producing a different taste. No further advance in this respect was made for two centuries.

In the kidney he noted the pyramids ending in a tube, from which the urine dropped, and he traced this tube up to its beginning, around the glomeruli, and showed that these tubules do not connect directly with the capillaries of the glomerulus by injecting the tubules with colored fluid and noting that this fluid did not color the capillaries. He also proved that these capillaries were the termination of the renal arteries by similar injections made in the arteries. The next advances in our knowledge of the kidney did not occur until the middle of the nineteenth century, with the work of Bowman.

We can only briefly consider his description of the capsule, trabeculae, the Malpighian corpuscles around the blood vessels and the vessels of the spleen. He showed that this was not a gland, but a contractile, vascular organ containing muscle fibers. In his description of fat and the omentum he really saw the red blood corpuscles as "globules of fat, of a definite outline, reddish in color." He thought they were fat cells, however, and left their real description to Leeuwenhoek, a later observer. His last important histological discovery was the detection of the tactile organs of the skin, and he also described the gross anatomy of the tendons of the heart.

In what has gone before it has been shown that Malpighi was a physiologist, histologist, anatomist and comparative student of all these branches, but he also made interesting observations in pathology. In his work on the brain he describes a case of hydrocephalus, and in writing about the liver he mentions the jaundice following tumors, obstruction and certain forms of cirrhosis of the liver. But in addition to all this work, he was a busy college professor and practitioner. He performed many autopsies and attended to a busy practice, ending his career at Rome as physician to Pope Innocent III. He received many honors, and he was so much esteemed in London that the Royal Society published most of his writings.

All this would seem enough for any one man to accomplish, but the major portion of his writings were devoted to entirely different subjects, and he is generally considered the founder of embryology and vegetable morphology. Setting aside the work of Aristotle and Harvey as merely introductory, his work on the beginning of life in the chick, "*De Formatione Pulli in Ovo*" and "*De Ovo Incubatio*," include 86 figures and 22 pages, which show the various changes in the chick from the first 24 hours to birth. He described the aortic arches and heart and showed the neural groove as well as the brain and optic vesicles. Also, he believed in the new formation of some parts, yet he thought most of the



SELECTED SKETCHES FROM MALPIGHI'S WORKS, SHOWING STAGES IN THE DEVELOPMENT OF THE CHICK.

tissues and structures were prearranged and existed as rudiments in the egg.

As a zoologist this versatile man made one of the first careful dissections of a small insect—the silkworm. He discovered the special breathing apparatus of tracheae ending on the surface, the nervous system, the intestine and the excretory, or Malpighian, tubes. The silk gland was also described.

And lastly, Malpighi, together with Grew, laid the foundations of the gross and microscopic morphology of vegetables—a science called phytotomy. And thus we must hail him as the founder of vegetable morphology.

The real gist of this work, as pointed out by Sachs in his "*History of Botany*," consisted in the gross description of the rind, wood, pith, roots, stem, leaves and fruits of plants, and Malpighi did yeoman's work in studying the gross anatomical structure of various forms of vegetable life. His "*Anatome Plantarum*," or the anatomy of plants, appeared in 1675, and he first describes the cuticle and woody fibers of the stem containing the tracheal and sap tubes. The structure of the pith, the existence of the embryo in the seed and the connection of the underground tubes of the many roots with one parent trunk are all included in this work. He also started many inquiries concerning the functions of plants, or vegetable physiology. Merely incidently he mentions the cells as separable utricles, but even this was a dim foreshadowing of the cellular theory, which was clearly set forth by Schleiden and Schwann in 1838 for vegetables and animals.

Before taking leave of this many-sided genius, I wish to show two of his pictures taken from Locy's "*Biology and Its Makers*." One shows the handsome features of the young man and the other the care-worn look of the still handsome older man, for Malpighi had his troubles. All authors testify that his disposition was kindly, modest, even retiring, bold in defending the truth and affectionate. He was delicate in health. He was happily married and his wife was a most congenial and encouraging companion, and she remained his affinity until the end.

Two events show his real character. The Sbaraglia family had persecuted him and belittled his fame during all his life, this enmity being due to an old boundary dispute between the two families, and yet when their partisans made an attack upon him and his feeble old wife in their country villa he still bore their persecution patiently. Later his house was burned through the neglect of his wife, but his friends testified that although he lost many books, specimens and writings, yet he only concerned himself in comforting his poor old wife. He received honors at home and in England, in the latter place being elected an honorary member of the Royal Society. He died in Rome in 1694 of apoplexy, and his body was interred with great pomp in Bologna and a statue erected to his memory.

In taking leave of this great investigator, the thought has forced itself upon me that we should have more of these great works translated. At present the books of the great masters in our library strike me, with some pathos, as dignified, silent, cultivated gentlemen in a strange land, unable to speak our language. This society, by means of a committee, could easily secure the services of professors and students in the university of those splendidly educated men in our community—the Jesuit priests—and of other sources from which translations could be secured. I fairly itch now to read Malpighius, after having struggled through portions of a page here and there, and, in conclusion, I hope to see the day when I can read the Book and Journal Club edition of the "*Omnia Opera*" in plain, unvarnished English.

STATE BOARDS AND HIGH ENTRANCE REQUIREMENTS.*

By Herbert Harlan, A.M., M.D.,
Baltimore, Md.

ABOUT a year ago I received in my office a delegation of three men from one of the southern counties of this State. The spokesman was a storekeeper; the others farmers. They were well enough dressed and looked prosperous. The geological survey map shows their neighborhood to be mostly salt or fresh water marshes. Roads are generally bad, and in the winter almost impassable. I know something of the locality. The catching of muskrats, oysters and fish in the different seasons and tilling whatever soil there is above tidewater are the occupations of the scattered inhabitants.

Their local doctor had received a political appointment and moved to the city. Their appeal to me was to allow an unlicensed man who had failed in several State Board examinations to locate among them, at least temporarily. He had been practicing there without registration and had given satisfaction. They said they had been unable to get anybody else. I happened to know that several physicians had visited the neighborhood and had declined to settle there, not on account of any lack of paying patients, but because of the isolation, of the absence of any refined and educated people with whom one could associate.

Since that time I have had a number of letters showing like conditions in other places.

The deans of the three medical schools in the city graduating the largest classes have each told me that such letters are common from laymen in rural districts, asking that the graduating class be advised of the good opening for a doctor in their locality.

In general, there is a superabundance of doctors—one to, say, 600 people throughout this country; but there is a growing scarcity of men willing to settle down and live and raise their families where all the people are plain, rough, uneducated, uninteresting, and for the most part in very moderate circumstances; some of them poor.

Four State Boards now require that before an applicant can come before them he must have a diploma from a medical school which requires the equivalent of one year's college work preliminary to the beginning of medical studies. They are Connecticut, South Dakota, Colorado and Kansas. And three others—Indiana, Minnesota and North Dakota—require two years in college.

Now given a young man who has money enough to see him through such a medical course. That young man has been used to some of the comforts and conveniences. He has had at least the five or six years of town life, an occasional bath, etc., and is he likely to be willing to spend the rest of his life in such a region as I have described? I think not.

*A paper read before the Association of American Medical Colleges, March 21, 1910.

And how about the people of remote country districts? Are they to depend on the patent medicines they can purchase at the smallest stores, and is all their obstetrical practice to be done by a very poor class of midwives? There are a good many such people, and are we, who do so much for humanity and are proud of it and somewhat inclined to boast of it, to give them no consideration?

We know how the standards of medical schools have been raised during the last twenty years. We know how low it still is in many schools. The Chairman of the Council on Medical Education of the A. M. A. has recently told us that twenty schools have been merged with others or been discontinued; that there are still 140 left in the United States, and that half of these are not acceptable.

We know that State examining boards were established to make the bad schools improve or go out of business. We know that if there were only the right sort of medical schools there would be no occasion for any State examining boards.

We know that while examining boards are far from perfect, that they have done, are doing and will do good and effective work. We know that there are and ought to be a few richly endowed medical schools taking high ground, admitting only students who are well advanced, and giving them every possible advantage, but we of the boards and you gentlemen of this association are not concerned with these. It is those at the other end of the line which require our attention. Our duty is to fix and maintain the minimum standard of medical education. The maximum should have no limit.

We have seen standards of nurses' training schools raised, chiefly, it has seemed to me, along higher educational and particularly along social lines, until the registered nurses are so high that another class, the practical nurse, has had to be found.

Are we perhaps to be forced to provide for the licensing of practical doctors?

It is my opinion that no one thing will do as much to raise the standards of a medical school as a high entrance requirement. Yet it is also my opinion that the present one of a completed course in a good four-years high school is at this time sufficient, and that boards and associations, councils and committees on medical education will have full scope for all their energies if they devise an effective way to strictly enforce the present standards of entrance requirements. It is to this opinion that I ask your consideration.

NEW AND NON-OFFICIAL REMEDIES. Chicago: Press of the American Medical Association. 1910.

This volume contains a description of the medicinal articles which have measured up to the standards of the Council on Pharmacy and Chemistry, and which, therefore, have been accepted by that body for inclusion in the "New and Non-Official Remedies" issued yearly by the American Medical Association. This book sells at 50 cents cloth and 25 cents paper bound.

Current Literature.

REVIEW IN GYNECOLOGY AND OBSTETRICS.

Under the Supervision of A. Samuels, M.D., Baltimore.

FIBROMYOMATA UTERI.

THE careful study of fibroid tumors in the uterus in the past few years has shown that these tumors are not the benign growths that they were once believed to be. The traditional teaching that they seldom produce symptoms, that after the menopause they become smaller, and then disappear, and that in rare instances only do they cause death has been discredited. Each succeeding series studied shows more clearly that the danger of these tumors is not only from the symptoms produced by the tumors themselves, such as hemorrhage, etc., but also from the complication and degeneration, etc., incident to their continued presence in the uterus. It now seems time from the pathological study of the changes and degeneration which take place within the uterus to reconsider the treatment of these tumors. The men who have worked on this subject have been so energetic in their efforts to disprove the traditional teaching that they have gone to the other extreme, and advocate that all fibromyomata uteri should be removed when diagnosed.

There can be no doubt that some of the workers have overestimated the dangers of these tumors, which seem to be a natural outcome of a previous underestimation of them. I shall endeavor in this paper to present the subject in a fair and impartial manner and shall draw such conclusions as statistics seem to warrant.

Stephen E. Tracy (*Surgery, Gynecology and Obstetrics*, March, 1908, Vol. VI) analyzed a series of 3561 consecutive cases, which have been reported by the following authors: Martin, Noble, Collingworth, Frederick, MacDonald, Webster and others. He found in this series of 3561 cases of fibromyomata uteri 1147 recorded degenerations and changes in the tumor and uterus. It is a well-known fact that two or more varieties of degeneration may be noted in the uterus and tumor in the same patient; therefore, if each variety of degeneration be tabulated under separate classes, it will readily be seen that the number of patients suffering from degenerated tumors is decidedly less than they are led to believe. A knowledge of the manner in which these degenerations are tabulated is most important if an attempt be made to estimate with any degree of accuracy the mortality which would result in these cases if the patients were not subjected to operation. For instance, a uterus might contain a necrotic fibroid and a carcinoma of the fundus—a combination not unknown, any one of which would cause death if the patient were not relieved by surgical intervention.

Conditions which may be considered as complications are those arising from (1) inflammation; (2) pressure of the tumor; (3) miscellaneous causes.

(1) Conditions arising from inflammation are adhesions to the viscera, adhesions to the tumor, adhesions to the omentum, adhesions to the bladder, and ovary and chronic pelvic peritonitis.

(2) Conditions arising from pressure of the tumor are ascites, dilated ureters, hydro-nephrosis, acute and chronic intestinal obstructions.

(3) Conditions arising from miscellaneous causes are hemorrhages in the peritoneal cavity and dangerous uncontrollable hemorrhage.

Degeneration may take place in the tumor or in the uterus itself. In a series of 500 cases taken from the reports of the Kensington Hospital for Women, in which the ages of the patients were given, myxomatous degeneration did not occur until after the age of 30. Between the ages of 30 and 40 six were recorded; between 40 and 50 four cases. Calcareous infiltration occurred five times. One between the ages of 30 and 40, one between 50 and 60, and three between 60 and 70. Fifteen cases of cystic degeneration were noted, one case occurring under 30, and 10 cases occurring between the ages of 30 and 50. Necrosis of the tumor was noted in 27 cases; two under 30, and 11 between 40 and 50. But four cases of carcinoma cervicis uteri were noted; none under 30 and two, the largest number, between the ages of 40 and 50. Of sarcoma, six were noted; none under the age of 30 and three between 40 and 50. Of carcinoma corpus uteri, only two cases were noted and these occurring between 50 and 70. The age at which degeneration took place in this series of 506 cases varied between the ages of 23 and 68. Of the 114 cases in which degeneration took place, 74, or 69.9 per cent., occurred after the age of 40 years. These findings are in accord with the teaching of Giles who states:

"Age does not materially influence the character of tumors (fibromyomata uteri) except in the matter of degenerated changes which are strikingly absent before the age of 40 years."

By far the most serious complication of fibroid tumors is malignancy. Charles P. Noble (*Fibroid Tumors of the Uterus, Journal American Medical Association*, 1906, Vol. XLVII) collected from the various reports 4880 cases of fibroid tumors which showed cancer of the cervix in 63 cases, cancer of the body of the uterus in 75 cases. Ellice MacDonald (*Journal American Medical Association*, March 30, 1909), in an analysis of 700 cases found adeno-carcinoma of the fundus in 20, or 2.9 per cent.; squamous-cell carcinoma of the cervix occurred in six cases, or 0.8 per cent.; sarcoma occurred in seven cases, or 1 per cent. The total malignant complications from MacDonald's series of 700 cases were 35, or 5 per cent. These findings are in accord with the cases analyzed by Tracy, who found carcinoma corpus uteri in 1.7 per cent. of the cases; carcinoma of the cervix uteri in 0.7 per cent. of the cases.

When carcinoma of the cervix uteri is found in conjunction with fibromyomata uteri, it is probably but a mere coincidence, as there is but little evidence offered and no proof produced that the condition is caused by the fibroid tumor. However, carcinoma of the cervix uteri and chorioepithelioma are classified with the degenerations, they should more properly be put with the associate conditions, as chorioepithelioma was found only in two cases. In a series of over 5000 cases malignancy, including carcinoma of the cervix uteri, was recorded in 4 per cent. of the cases. In the same series of about 5000 cases 11 per cent. would probably have resulted fatally from conditions due directly to the presence of the fibroid tumor, had the patients not been subjected to the operation. Among these conditions we may mention necrosis of the tumor, carcinoma corpus uteri, sarcoma, hemorrhage, incarceration of tumor, acute and chronic intestinal obstructions. There is no doubt but that a few cases of cystic myxomatous degeneration would progress and probably increase the mortality 2 or 3 per cent., thus making the mortality without operation from 12 to 14 per cent.

The conservative surgeons recommend that fibromyomata uteri should be removed only when they produce symptoms. The surgeons who take the radical view that all fibromyomata uteri should be removed when diagnosed assert that women do not present themselves nor do they submit to vaginal examination unless they have symptoms and suffer. Therefore, of patients who are known to possess fibromyomata uteri only about 12 to 14 per cent. of those who have symptoms and suffer would die from the degeneration and complication which would result from these tumors if not relieved by surgical intervention. Many of the associate conditions would produce death if the patients were not subjected to operation, but they should not be added to the estimated mortality of fibromyomata uteri, because they are independent lesions and in no way connected with the tumor, except that they co-exist.

Phlebitis, thrombosis and embolism are conditions which occur more frequently after operation for fibromyomata uteri than from any other surgical condition. The pathology of these conditions is not clearly understood, but it is probable that they are due to changes in the blood, changes in the blood vessels and changes in the rate of blood current.

M. Baldy (*American Journal, Obstetrics*, Vol. LIII, No. 3) in a series of more than 3000 operative cases had 19 patients die suddenly. Thirteen of the deaths occurred in 366 cases of fibromyomata uteri. The deaths were diagnosed as follows: Cardiac, 13; pulmonary, 4; cerebral apoplexy, 2.

In 1884 Hofmeyer called attention to cardiac diseases in cases of abdominal tumors and especially fibromyomata uteri of large size. Fenwick (*London Lancet*, June, 1888) reported 22 deaths from cardiac degeneration in patients with abdominal tumors. Strassman and Lehman, quoted by Kessler (*St. Petersburg Med.*

Woch., Vol. XXX, 1905; abstract from the *American Journal of the Medical Sciences*, Vol. CXXXII, No. 3, September, 1906), in 71 carefully recorded consecutive cases of uterine myomata found that 30.9 showed subjective symptoms and objective signs of organic heart lesions. Webster (*American Medicine*, Vol. IX, 1905) in a series of 210 cases of fibromyomata uteri subjected to operation found that cardio-vascular symptoms were present in about 25 per cent. of the cases. Williams, quoted by Webster, reported the finding in 30 autopsies in women with uterine myomata as follows: Valvular diseases, mostly chronic, 6; fatty degeneration, 5; hypertrophy and dilatation, 3; atheroma of aorta, 3; small heart, 1; normal, 12. The statement of Baldy that fibroid disease of the uterus is not a local disease alone, but that the process is practically a general one, in that it involves organs; how many, and to what extent, and how early, we are unable to tell, was probably correct. The large number of cases in which fibromyomata uteri and visceral degeneration are associated suggests that they may be caused by a common factor, and that by operation we can cure only local conditions and save from 12 to 14 per cent. of patients, who would die from degeneration and the complications caused by the tumors; diseased blood vessels and crippled organs cannot be restored by any pelvic operation.

Many cases of fibromyomata uteri are accompanied by symptoms in the urinary organs, probably the most usual condition is frequent micturition; in some cases there is an inability to pass the urine, and in other cases there is a marked pressure upon the ureters which results in hydronephrosis and degenerated changes in the kidneys. Webster reports about 30 per cent. of the cases of fibromyomata uteri in which urinary disturbances were present. Other cases of urethral compressions from fibromyomata uteri reported by various authors show that the compression was caused by large tumors and in these cases the bladder also gave symptoms of pressure. The symptoms varied from frequent micturition to complete retention. Large fibromyomata uteri which fill the pelvis produce more or less pressure on the bowels and may even cause obstructions. Partial obstructions, with marked constipation, impaired gastro-intestinal function, distention of the bowel with gas and malnutrition, are probably present in a large percentage of cases.

Women who possess fibromyomata uteri are prone to sterility. Mann (*American Journal of Obstetrics*, June, 1907), in an examination of 67 cases of fibromyomata uteri, found that 16 patients were unmarried and 27 were married and sterile, making 43, or 64 per cent., of cases where there had been no pregnancy. Of 51 patients who were married, 23, or 45 per cent., had been pregnant. In a series of 125 cases of fibromyomata uteri reported by Frederick (*American Gynecology*, Vol. I, 1902) 66, or 52.8 per cent., of patients had not been pregnant. Of the 59 patients who had born children there had not been a pregnancy for at least

10 or 20 years. It is probably safe to state that from 25 to 30 per cent. of married women who possess fibromyomata uteri will not become pregnant. The associate conditions will not be considered in detail, as they are independent lesions and are not known to be etiological factors of fibromyomata uteri nor are they themselves, except in a few cases, caused by the tumors; and, no doubt, in many instances where fibroid tumors have been removed, the operation was primarily undertaken for an associate condition and the presence of the tumor not recognized until the time of the operation.

Until recent years, it was the opinion of all members of the profession that uterine fibromyomata atrophied and disappeared after the menopause, and that the patient made a spontaneous recovery. Even at this time that same opinion is held by many members of the profession. That such a teaching is erroneous is evident from a study of the statistics. In a series of 506 cases degeneration was found 114 times, and in nearly 64.9 of the 114 cases the degeneration took place after the age of 50 years. Bland-Sutton claims that the dangers of fibromyomata uteri are increased after the menopause. He states: "There is nothing more ironical than a woman spending 20 or 30 years of her life as a chronic invalid, who, on account of her uterine fibroid, has the expectation that at the menopause she would be restored to health and begin a new life, and then to realize that far from this dream being fulfilled, the fibroid becomes necrotic, extruded and septic, and places her life in the greatest peril, and that she will die in spite of surgical intervention."

Operation.—In regard to the choice of operation there is no doubt that a myomectomy is the ideal operation. Unfortunately, this operation is applicable in only a small percentage of cases—to easy, accessible, submucous tumors and subserous tumors, limited to two or three nodules in young, childless women, where a complete eradication can be done. While myomectomy is the ideal operation for subserous tumors, it is nevertheless followed by a mortality of about 5 per cent. In the same class of cases there would be practically no mortality after a supervaginal hysterectomy. The mortality alone does not represent the seriousness of the operation, as the morbidity is marked. In cases of malignant degeneration of the tumors or associate malignant diseases of the uterus, a pan-hysterectomy should be performed. A supervaginal hysterectomy is the operation of choice in all cases where a myomectomy is not indicated and in cases where a pan-hysterectomy is not demanded.

The statement is frequently made that in supervaginal hysterectomy the cervical stump may develop malignancy at a later date and that a complete operation should be performed in all cases. Malignancy does develop in the cervical stump in a few cases after supervaginal hysterectomy, but in less than 1 per cent. of the cases.

Jacobs (*Bulletin de la Société Belge de Gynécologie et de Ob-*

stétrique, Vol. XVI, p. 4, 1905-1906) had malignancy develop in the cervical stump three times in 466 cases of supervaginal hysterectomy. The criticism in favor of the complete operation is more than counterbalanced by the 3 or 4 per cent. of mortality after a supervaginal operation. Haultain (*British Medical Journal*, Vol. II, August 4, 1906) collected a series of 1781 cases of supervaginal hysterectomy performed by good operators, in which the mortality was 5 per cent. He compared this with a series of 1668 cases of pan-hysterectomy performed by good operators, in which the mortality was 8.27 per cent., which showed conclusively that the mortality after a supervaginal hysterectomy is much less than after a complete operation. The mortality following operation for fibromyomata uteri has steadily diminished as the refinement in technic has advanced. The mortality from recent reports by Webster, Deaver, Baldy, Haultain, Noble, Worter and Jacobs (a total of 1268 operations) but 21 deaths occurred, a mortality of 1.6 per cent.

Conclusions. — (1) That a large majority of fibromyomata uteri undertakes some form of degeneration, but that the majority, 64.9 per cent., of degenerations takes place in women who are 40 or more than 40 years of age.

(2) Fibromyomata uteri and visceral degeneration are associated in a large number of cases.

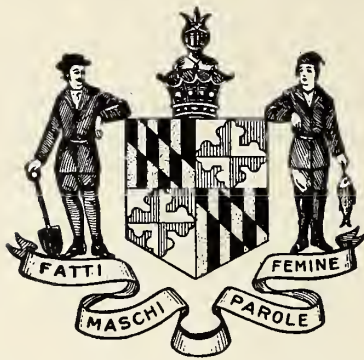
(3) That young women who are anxious for maternity, but possess small tumors, which are causing no symptoms, need not be subjected to operation, but should be instructed to report for examination as soon as symptoms develop.

(4) That all fibromyomata which produce symptoms regardless of the age of the patient, and all fibromyomata in women 40 or more than 40 years of age, should be removed when diagnosed, because the mortality following operation is below 5 per cent. and is less than the risk of carrying the tumor, as from 12 to 14 per cent. of these patients would die if not subjected to operation.

(5) That a supervaginal hysterectomy is the operation of choice, because of the ease and rapidity of its execution. Also, it is followed by less mortality and should be performed in all cases where a myomectomy is not indicated and where a pan-hysterectomy is not demanded.

(6) That the associate conditions would cause death if the patient were not subjected to operation, but the mortality of these cases should not be headed under the estimated mortality of fibromyomata uteri, as they are independent lesions, and are in no way connected with the tumors except that conditions co-exist.

(7) That a pathological study should be made of all fibromyomata uteri which are removed because of the malignancy and degeneration which take place in these tumors.



MARYLAND LUNACY COMMISSION.

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JOHN D. BLAKE, M.D.

R. MARKLEY BLACK, M.D.

ATTORNEY-GENERAL ISAAC LOBE STRAUS, ex-officio.

This Department is Under the Direction of the Secretary of the Commission



THE National Association for the Study of Epilepsy will hold its annual meeting in Baltimore on Saturday, May 7. This [meeting will be held] under the auspices of the Maryland Psychiatric Society in the Medical Library Building.

The committee in charge of the meeting consists of Dr. Wm. R. Dunton, Jr., Dr. Henry M. Thomas, Dr. Frank W. Keating and Dr. A. P. Herring.

The purpose of this Association is to awaken the interest of the profession and the public in the treatment of epilepsy. The meeting on Saturday evening will be for the public. It is hoped that, as a result of this conference, sufficient interest will be awakened in Maryland to induce the State to establish a colony for epileptics similar to those in other States.

Virginia has recently appropriated \$100,000 to establish an epileptic colony.



WENTY-FIVE years ago the first steps were taken to have the State assume its proper place in caring for the dependent insane.

Five years ago a law was enacted placing the obligation of properly providing for insane upon the State.

Two years ago this law was repealed and re-enacted, deferring the time when the State would assume the maintenance, care and control of all dependent insane to 1911.

The requirements of the present law have been complied with by the Lunacy Commission in preparing and presenting "to the Legislature on or before January 15, 1910, such amendments to the present law regulating the care and treatment of the insane and such other measures, including plans for the enlargement of the present State hospitals or the creation of other State hospitals, as may to such commission seem necessary."

The question is now up to the members of the General Assembly for action and decision, either favorably, unfavorably or by a compromise. The answer to this vital question, which strikes the very root and foundation of society, will be determined within the next few days. Let us hope that the decision will be a favorable one, which means that mediaeval methods will give place to the modern care and treatment of the insane.

There are two bills before the General Assembly the enactment of which will bring about improved conditions. The first bill is revise the lunacy laws by enlarging the supervisory powers of the commission and providing a hundred-dollar rate for patients from Baltimore city and the counties who are sent to State hospitals. This bill means a saving of thousands of dollars to Baltimore city, and the various counties, and will only cause a comparative slight increase in the State's expenditures. Under this law it will be cheaper for the counties to send their insane to a State hospital than to the county asylum.

The second bill creates a \$600,000 bond issue, which will provide sufficient buildings to accommodate the majority of the insane now in county asylums and almshouses, and also provide a new hospital for the negro insane.

The money will be divided among the following hospitals:

Springfield State Hospital.....	\$270,000
Maryland Hospital for the Insane.....	80,000
The Maryland Asylum and Training-School for Feeble-Minded.....	150,000
New Negro Hospital.....	100,000

Society Reports.

THE DEEP INTRAOCULAR LESION OF INFANTILE INHERITED SYPHILIS AND TARDY INHERITED SYPHILIS FROM THE STANDPOINT OF GENERAL PATHOLOGY AND THERAPEUTICS.

THE speaker made an appeal for the examination of the eyes of all children with syphilitic history to determine if the intraocular lesions are fatal in origin and to distinguish them from the diseases of later child life. The earlier these diseases are known the better the prognosis. The disease is not comparatively mild, as many children die in utero, while others live with intraocular stigmata. In infants diseases of the uveal tract are oftener seen than keratitis. Ophthalmoscopic examination should be made if effusion does not interfere. The iritis is plastic in type, but the speaker has never observed gummata. The prognosis in keratitis is better if there is no choroiditis. The prognosis depends on the period when the iritis is first seen. In choroiditis the retina is often involved also. This disease is not uncommon at birth, and may begin in utero. The peripheral vision is the more greatly affected, and there may be good visual acuity, especially in central vision. In the retina and optic nerve the syphilitic lesions will be seen only by special search, and are not seen in the stage of efflorescence. Retinitis due to syphilis may go on to total obliteration of the vessels. In young children optic neuritis is sometimes seen, and often ends in optic atrophy. The fetus in utero may suffer from syphilis, yet be born at full term and live. It may have eye lesions if we look for them. Iritis, with adhesions, may be seen in the newborn, and yet show little. Iritis seen at birth, and intra-utero in origin, is syphilitic. Dr. Bull cited five cases of this kind. Most of these showed mucous patches of anus and genitalia.

LESIONS IN TARDY INHERITED SYPHILIS.

Fournier has given much to this subject. The syphilitic taint is met with in all classes of life and with the greatest variety of stigmata. The subject may show no lesion that can absolutely surely be proved to be syphilitic. The eyes most frequently, and next the teeth, show syphilitic stigmata. The condition may be obscure and hard to diagnose. The obscure cases are relegated to the syphilitic class. A thorough examination is necessary, and the child's memory of early eye trouble is important. We may have gross lesions of the choroid, retina and optic nerve. Gross lesions of the fundus, as atrophic choroido-retinitis, show dense white patches. There may be a black border around the optic nerve. Though not a gross lesion, there may be a lead color of the fundus, either cuneiform or in spots, giving a stippled appearance—reti-

nititis pigmentosa. These lesions are usually bilateral and constitute strong presumptive evidence of syphilitic taint. We may have thin-walled arteries and veins or a mydriasis. Often all these can be found in one case, but they must be looked for. We may have congenital bad vision, also a night blindness, due to the pigment changes in syphilis. Rotary and lateral nystagmus is also a functional stigmata. There may be noted apparent myopia, due to refractive changes in the media of the eye. There may be defects in the eyeball in syphilis, such as congenital cataract. The syphilitic child may not be shriveled, undersized or show any head changes, except the change in the face bones. Optic, dental and aural stigmata are very important. The most important is, of course, in the teeth, but Hutchinson's teeth are not always seen. The dental stigmata are oftener seen than the optic stigmata in late inherited syphilis. When we have, as we may, all the changes of arrested development the diagnosis is easy. Severe, acute deafness, with no demonstrable lesion, speaks for inherited syphilis, especially if the case answers to specific treatment.

The symptoms and stigmata are important. One stigma alone, faintly marked, points to syphilis if we can find stigmata in other members of the family. The immediate and collateral members of the family must be examined if no other positive evidence can be found. Syphilis can go through two generations. Miscarriages, early infant mortality, infants stillborn, before or at term, and early, sudden death of infants all point to syphilis.

THERAPEUTICS.

Stigmata and symptoms always call for specific treatment. The diet is important. Broths and soups should be used early. A mild ointment is good. The eye lesions respond better to specific treatment than is generally supposed. Dr. Bull cited cases to show the difficulty of diagnosis with obscure symptoms and without definite stigmata.

Fournier summarizes his therapeutic deductions as follows:

1. Specific treatment is indicated when we have lesions that might be syphilitic and one stigma.
2. With stigmata we can use specific treatment even if there are no lesions.
3. The parents should have prolonged treatment in a syphilitic family.
4. Prolonged treatment for a pregnant woman that has before born children with stigmata.

Dr. Bull, in conclusion, said that he thought it should be made a penal offense for any syphilitic person to marry.

CHARLES S. BULL, M.D.,
Section on Clinical Medicine and Surgery.

MARYLAND MEDICAL JOURNAL

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BALTIMORE, APRIL, 1910

MEASLES AND MICE.

A. F. A. KING (*Washington Medical Annals*, March, 1910) advances the interesting hypothesis that the microbe of measles is possibly conveyed to man by the mouse. Unfortunately, he offers no experimental demonstration, his conclusions resting on more or less substantive evidence. He admits the man-to-man transmissal by exposure, and is concerned only with the origin of those cases which have not been exposed, those which apparently arise *de novo*, the initial case from which the contagion spreads. As corroborative of his theory, he cites instances in which measles seemed to arise from contact with straw which harbored quantities of mice. During the Civil War soldiers of both sides contracted measles apparently from lying on straw. In 1862 Dr. Salisbury of Newark, Ohio, obtained from wheat straw spores which, when injected into the body, produced a disease which appeared to be identical with measles, and which conferred future immunity upon those inoculated. These findings have been denied by Woodward, who inoculated himself and others with straw fungi without effect. King, however, believes that if the mouse is admitted as an etiological factor, the conflicting statements of Salisbury and Woodward may be reconciled. In investigating the probable source of a *de novo* case of measles in Washington, King found the patient contracted the disease after playing in the hay loft of the White House stables, the children of the stableman likewise contracting the disease. According to the groom, there were any quantity of mice in the loft.

In making cultures of the intestinal excretions of mice, King has isolated bacilli which resemble in many respects those found by Canon and Peilecke in the blood, expectoration, nasal and conjunctival mucus of measles. King also calls attention to the coincidence of the increased prevalence of measles during mouse plagues. Another point in favor of his theory is the prevalence of measles during the cold months, when mice swarm into the house for protection and shelter.

Still another point in favor of the mouse theory is the exemption

of the Färöe Islands from measles between the years 1781 and 1846, a period when, according to J. Russel-Jeaffreson, these islands were free of mice. Considering our lack of knowledge concerning the method of transmissal of the contagion of measles, the theory of King should bear investigation. The instances cited by him of undue prevalence of mice and measles may only be a coincidence, but there is certainly a suggestion of direct relationship.

IS THE LOCALIZATION OF UNDUE AMOUNT OF ADIPOSE TISSUE IN WOMAN'S ABDOMEN PHYSIOLOGICAL OR PATHOLOGICAL?

OF woman's minor ailments, perhaps none is so embarrassing or distressing as the localization of excessive deposits of fat in the abdomen. Many a beautiful figure has thus been distorted. The burden of carrying this useless fat is a handicap. The figure is unsightly and ungainly. The woman is awkward, and walks with a waddling gait, and generally is short of breath. The toilet of the lower abdomen is extremely difficult, and in the most pronounced instances the individual thus affected has been unable to see her thighs or lower person for years. Aside from the mental distress, great physical disability is associated with undue accumulation of fat in this region. Howard A. Kelly (*Journal of Surgery, Gynecology and Obstetrics*, March, 1910) considers this a disease, and reports several cases which he operated on for correction of the deformity with gratifying results. Occurring so frequently, he says physicians have come to look on it as natural and to be tolerated as any other physiological condition. Instead of being inevitable and irremediable, surgery gives relief. More than 10 years ago he operated on a monstrous abdominal wall, taking off from it a wedge of fat and skin extending from one flank to the other down to the deep fascia. The patient recovered from the operation, and was much benefited by the loss of the pendulous abdomen, and, as he says, "with it her hippopotomal appearance." In place of the overhanging fatty boss she had, from the time of the operation, a flat, "straight front" belly, with a long linear scar from side to side. We are aware that fatty deposits have been removed from the abdominal parietes in association with other operation, but to our knowledge this is the first instance in which a surgeon has intentionally performed a plastic operation for abdominal lipomatosis.

Medical Items.

JOHN MCPHERSON SCOTT, M.D., University of Pennsylvania, '73, was elected Mayor of Hagerstown, Md., on the Republican ticket, by a majority of 655. Dr. Scott has served two terms in the House of Delegates.

DR. HARRY ELLIS CLEMON of Port Deposit, whose death we are sorry to note below, was one of the flood sufferers during the recent ice gorge which so afflicted Port Deposit. He, together with his wife and mother, was rescued from the roof of his home.

THE Association of American Medical Colleges met in Baltimore, March 21, for a two-day session. The convention was largely attended by Baltimore physicians, and many interesting papers were read.

SIX HUNDRED AND FORTY-TWO new cases of tuberculosis were reported in Baltimore city during the month of February.

THE annual report of Eudowood Sanitarium, just issued, gives a fine showing for the institution.

THE engagement is announced of Howard Kahn, M.D., University of Maryland, '00, and Miss Florence Ring, both of Baltimore.

MRS. JOSHUA McCAY has announced the engagement of her granddaughter, Miss May Morgan, of Baltimore, to Dr. Ralph Longworth Nichols of Saranac Lake, N. Y. Dr. Nichols is a graduate of the Johns Hopkins University, Medical Department, class of 1897, and is a son of Mrs. Bellamy Storer.

A BANQUET will be tendered to Dr. William Henry Welch at the Hotel Belvedere on April 2 by many of his colleagues and friends. Victor D. Brenner has been requested to prepare a medallion of Dr. Welch, a copy of which will be presented to the Johns Hopkins University, and another to the Medical and Chirurgical Faculty of Maryland. The invitations bear the names of such noted men as Andrew Carnegie, Ira Remsen, John D. Rockefeller, Jr., Woodrow Wilson, Charles W. Eliot, Brent Keyser, Henry M. Hurd, Abraham Jacobi, Brice W. Goldsborough, Elihu Root, Walter Wyman, S. Wier Mitchell, Wm. J. Mayo, Henry Phipps and others equally distinguished.

As we go to press we note with regret that the joint Committee on Finance and the Ways and Means Committee of the Maryland Legislature have refused to grant the petitions of the University of Maryland, College of Physicians and Surgeons, Baltimore Medical College and the Maryland Medical College for their customary annual appropriations. These schools deserve better treatment. They are distinct assets to the State of Maryland, in that they attract thousands of students annually to Baltimore, whom, it is estimated, spend at least \$500 per capita each year for maintenance, tuition, etc. Moreover, were it not for these schools the country districts and crossroads of the State would be in dire straits for physicians. The amount formerly appropriated by the Legislature has been little in comparison with the amount of benefit derived by the State in return, and we sincerely hope that some member of the General Assembly may be so far-sighted as to see the unjustness of this bill, and will amend it before final passage, so as to secure for these schools their appropriations. The same committees have seen fit to recommend that the Legislature ignore the request for aid of the Medical and Chirurgical Faculty. This is a grave mistake, and should have exception taken to it by the members of the Legislature who are also members of the Faculty.

MARRIAGES.

JOSIAH SLICER BOWEN, M.D., University of Maryland, '03, of Mt. Washington, Md., to Mrs. Elizabeth A. Buffington of Baltimore, February 28, 1910.

DEATHS.

HECTOR H. GOODMAN, M.D., University of Maryland, '81, at his home in Baltimore, March 20, of meningitis, aged 61 years.

HARRY ELLIS CLEMON, M.D., University of Maryland, '94, at his home in Port Deposit, March 20, of heart disease, aged 43 years.

FRANCIS W. PATTERSON, M.D., University of Maryland, '89, at his home in Catonsville, March 22, aged 74 years.

FRANK W. NELSON, M.D., Jefferson Medical College, '81, at his home in Forest Depot, Va., March 8, of heart disease, aged 53 years.

CHARLES COLEMAN BENSON, M.D., at his home in Philadelphia, March 12, aged 73 years.

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SHARP & DOHME

Book Reviews.

SAUNDERS' BOOKS. Philadelphia: W. B. Saunders Company.

The W. B. Saunders Co. has issued the 13th edition of the illustrated descriptive catalogue of its medical and surgical publications. It has been thoroughly revised to February, 1910. Besides numerous illustrations, two of which are colored, it contains over 20 new books and new editions. The first page gives a list of the new books and their authors. There is also on pages 79-80 a classified index, thus rendering it but a moment's work to put your finger on the books of any given line issued by this house. Every physician should provide himself with a copy, so that he can acquaint himself with Saunders' publications. Almost without exception, the volumes issued by this well-known firm are authoritative and written by eminent specialists. To the prospective buyer it will prove an invaluable guide in deciding what he wants. A line to the publishers is all that is necessary for its securement.

DISEASES OF THE STOMACH AND INTESTINES. By Robert Coleman Kemp, M.D., Professor of Gastro-Intestinal Diseases in the New York School of Clinical Medicine; Visiting Gastro-Enterologist to the New York Red Cross Hospital; Gastrologist to the West Side German Dispensary; Consulting Physician, Gastro-Intestinal Diseases to the Manhattan State Hospital; Member American Medical Association. With 280 illustrations, some in colors. Philadelphia and London: W. B. Saunders Co. Baltimore: Medical and Standard Book Co. Cloth. \$6 net. 1910.

Perhaps the feature of this book which at first glance attracts most attention is the large number of excellently executed cuts. These are profusely distributed throughout the volume, and add markedly to its attractiveness and instructiveness. The subject of gastro-intestinal diseases is well covered, as may be gleaned from a partial cataloguing of its contents: Anatomy of Stomach and Intestines; Physiology of Digestion; General Methods of Physical Examination; Methods of Physical Examination of the Stomach—Roentgen Rays, Radium Photographs of the Stomach, Radium Transillumination of the Stomach; Examination of the Functions of the Stomach; Diet; Local Treatment of the Stomach; Hematemesis; Cancer of the Stomach; Functional Diseases of the Stomach; Anomalies of the Position and Form of the Stomach; Nervous Affections of the Stomach; Methods of Examination of the Intestines; Constipation and Diarrhea; Dysentery; Typhoid Fever; Intestinal Hemorrhage; Neoplasms of the Intestines; Hemorrhoids; Appendicitis; Diverticulitis; Intestinal Obstruction; Nervous Diseases of the Intestines; Intestinal Parasites. The book is written for the general practitioner; therefore, is made as practical as possible. Methods of undoubted utility have been included in the text, and those alone. The author realizes the possibility of patients complaining of gastric disorders having diseased conditions of other organs, so he emphasizes the importance of a thorough physical examination of each and every part of the body—heart, lungs, kidney and nervous system. Defective and carious teeth may give rise to gastric disorders, according to the author. He states that the tongue cannot be regarded as an absolute index

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as regards the condition of the stomach, as there are conditions in which the appearance of the tongue is normal, while in smokers the tongue may be coated and yet no gastric intestinal disturbance be present. He especially emphasizes a careful examination of the abdomen, calling attention to the fact that inspection alone gives information of much importance. Typhoid eruption, glandular enlargement in the groin, caput medusae, protruding umbilicus, absence of respiratory movements, which is very significant of peritonitis, peristaltic unrest, and occasionally protrusion from tumor can be discerned. He also indicates what can be learned from palpation, percussion and auscultation of the abdomen.

The chapter on diet is very illuminative as well as instructive. He holds that a normal individual of average weight should consume 100 grams of albumin, 50 of fat and 450 of carbohydrate in 24 hours. This gives a food value of 2720 calories. In this chapter there are tables giving the chemic composition and heat value of a large number of the common food substances. Here we also find the statement that people could get along better with a greatly-lessened proteid diet than the present standards. We agree with the author in this statement, and by regulating the proteid diet fed to nephritic patients, according to the amount of nitrogen excreted in the urine, we have seen marked improvement in the general condition of this class of patients. All too little attention has been paid to diet, both in health and disease. The doctor advises his patients to abstain from this and that in a blind sort of a fashion. Albumen and casts are found in the urine. Proteids must be banished from the dietary. This is rank nonsense. What should be done is to determine the amount of proteid the individual can take care of. Give him that amount and no more.

Although short, some good reading is to be found in the chapter on feeding. The value of local treatment of the stomach and its limitations are thoroughly and simply discussed. An exceedingly interesting chapter is "Orthopedic Methods As Applied to Stomach Affections." This chapter is well illustrated with cuts illustrating the methods. The treatment of ulcerative conditions of the stomach is in accord with modern ideas, namely, surgical when local measures fail.

The remainder of the book deals with affections of the stomach and intestines. The diction is good, thorough; the print large, and the book a distinct addition to gastro-enteric literature. The views advanced are modern, and not embellished with a host of personal opinions of the author.

MODERN SURGERY: GENERAL AND OPERATIVE. By John Chalmers Da Costa, M.D., Professor of Surgery and Clinical Surgery in Jefferson Medical College, Philadelphia; Surgeon to the Philadelphia General Hospital; Consulting Surgeon to St. Joseph's Hospital, Philadelphia; Fellow of the American Surgical Association; Member of the American Philosophical Society; Member de la Société Internationale de Chirurgie; Member of the Medical Reserve Corps, U. S. A. Sixth edition, thoroughly revised and enlarged, with 996 illustrations, some of them in colors. Cloth, \$5.50 net. Philadelphia and London: W. B. Saunders Company; Baltimore: Medical & Standard Book Co. 1910.

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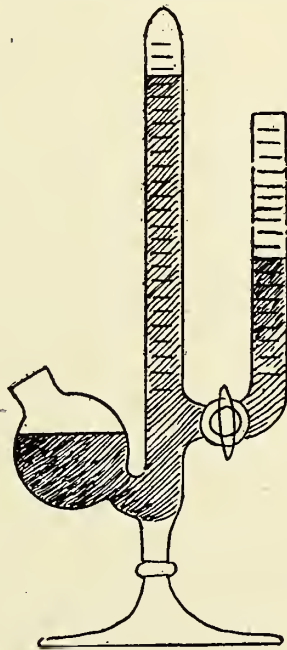
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of the last edition of Da Costa's "Surgery," so many new surgical facts and procedures have been added to our knowledge that he has found it necessary to entirely revise his former work in order to bring it up to date. He has indeed done this well. Almost every section has been changed, so that in its present shape the book would not recognize its former self. Amongst the most notable additions may be casually mentioned the present status of arteriorrhaphy; Crile's arteriovenous anastomosis for affecting transfusion of blood; a description of Brewer's tubes for transfusion; the use of Halsted's aluminum bands in the treatment of aneurysm; the operative treatment of recent fractures; Horsley's operation for chronic spinal meningitis; the use of positive and negative air pressure in intrathoracic surgery; Murphy's method of treating acute peritonitis; Cushing's operation of decompression for brain tumors; Bier's intravenous local anesthesia; the parathyroid glandules; the intraglandular extirpation of goitre; the Lorenz treatment of hip disease by weight-bearing and fixation; cystoscopy and catheterization of the ureters; gunshot wounds in war; Bier's treatment of inflammation; Wright's views on inflammation; Rosenberger's method of diagnosing tuberculosis by finding the bacilli in the blood; immunity, with a sketch of antibodies, of opsonins and of phagocytosis; bacterial vaccines; untoward effects of sera; tuberculin in diagnosis; Wassermann's reaction for syphilis; the serum diagnosis of cancer, and ankylosis.

In speaking of germicides, he calls attention to the fact that lithio-mercuric iodide is more powerfully germicidal than bichloride, does not form inert albuminate when placed in a wound, and is not nearly so irritant nor so poisonous as corrosive sublimate. He has used it frequently in his clinic, and finds its only drawback to be its expensiveness. In the section on immunity occurs the very pertinent statement that formerly immunity was supposed to be due to the exhaustion of some substance in the body necessary to the life of the bacterium, but has been dropped because of the demonstration that, though an animal may become immune to certain bacteria, these bacteria may continue to live in the host, as an example of which attention is called to the fact that typhoid organism may exist in the gall-bladder years after the attack of the fever. He goes thoroughly into the theories of phagocytosis, the humoral theory and the several varieties of antibodies. There is a thorough exposition of Bier's hyperemic treatment for inflammation. In testimony of its efficacy, he says that he is satisfied from personal experience that Bier's method of treatment is of great value in acute inflammation, as well as in chronic inflammation, and is not used as often as it should be. Arterial hyperemia induced by hot air is particularly noted in chronic inflammation. The tuberculin test is fully described, and the added statement made that it is more reliable in childhood than in adults. The section on ophthalmo-tuberculin reaction, though brief, is to the point and excellently expresses its status. The author himself is timid in its use, as he is exceedingly fearful of damage to the eye, which is the opinion of most authorities. Short accounts are given of both von Pirquet's and Moro's cutaneous tuberculin reaction. He expresses the view that Rosenberger's claims of the isolation of pure cultures of the tubercle bacilli from the circulatory system of those suffering with tuberculosis, is correct, and states that Rosenberger's studies upon cases in his wards in the Jefferson Hospital have been of great help to him.

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The author gives a full and comprehensive account of the serum diagnosis and Wassermann's test for syphilis. As regards the accuracy of this test he mentions that Butler, in a series of 150 cases, obtained a positive reaction in 123. Ten cases of primary syphilis were examined, and all showed the reaction. Of 36 cases in the secondary stage, 34, or 95 per cent., showed it; of 16 latent cases, 9, or 56 per cent., gave a positive reaction; of 31 cases in the tertiary stage, 29, or 94 per cent., were positive.

The various supposed causes of carcinoma, *i. e.*, irritation, the inclusion theory of Cohnheim, the Thiersch hypothesis, the parasitic theory and the biological theory, receive due attention. There is food for reflection in the statement of Roswell Park that if the present rate of increase in deaths from cancer in New York State is maintained for the next 10 years the disease will kill more persons annually than phthisis, smallpox and typhoid combined. The tone of the chapter on wounds of the pericardium and heart is modern. He advises suture of wounds of the pericardium. The writer advises exploration if wound of the heart is suspected. In these wounds, according to the author, chloroform is the anesthetic to be used. The book is well balanced—treatment, symptoms and diagnosis. The ground is thoroughly covered, the ideas advanced conservative, the knowledge imparted in accord with the opinions of the best authorities, and the cuts numerous, attractive and instructive. It is an admirable textbook for students and guide for teachers and young operators.

HANDBOOK OF THERAPY. Chicago: The Journal of the American Medical Association.

This volume consists in a reproduction of the matter which has appeared in the therapeutic department of the *American Medical Journal*. It is composed of the best articles on therapeutics which have appeared in the *Journal* during the past three years. It is of such a size and so bound that it can be slipped in the vest pocket and thus be ever ready for reference purposes. The matter contained therein has been especially selected for its utility to general practitioner and student. The formulæ contained are, as a rule, simple. Although the book is not a finished treatise on therapy, it nevertheless contains very much useful information in easily readable and exceedingly condensed form on a vast number of medical affections, and we take great pleasure in commending it to the medical profession.

REFRACTION AND HOW TO REFRACT. Including sections on Optics, Retinoscopy, the Fitting of Spectacles and Eye-Glasses, etc. By James Thorington, A.M., M.D., Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine (1896-1909); Member of the American Ophthalmological Society; Fellow of the College of Physicians of Philadelphia, etc. Fifth revised edition. Two hundred and fifty-one illustrations, 13 of which are colored. Philadelphia: P. Blakiston's Son & Co. Cloth, \$1.50 net. 1910.

"Refraction and How to Refract" deals entirely with the elements, instruments and methods entering into this branch of ophthalmology. The subject is taken up in a systematic manner. The author, taking nothing for granted as regards the previous qualifi-

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cations of the reader, includes a chapter on optics. In this section he enters fully into the physical properties of light in passing through lens and prisms; the uses of prisms; of lenses; of the varieties and kinds of lenses and their action. The ophthalmoscope and the direct and indirect method of its use is simply told, without the inclusion of a number of unessential details. The method of detection of hyperopia, myopia and astigmatism is fully described; the mysteries of retinoscopy are unfolded; the muscular (both external and internal) affections, their detection and correction, comprehensively explained. The chapter on applied refraction is especially interesting and instructive. Without a doubt, students and beginners in ophthalmology will find much useful information in this book, which is a model of its kind. Its arrangement could not be excelled; the presswork is excellent, and the numerous illustrations to the point. The style is terse and to the point, and the text is an excellent exposition of the objective methods applied to the detection of errors in refraction.

CLAIMS ARISING FROM THE RESULTS OF PERSONAL INJURIES. THE RELATION INJURY BEARS TO DISEASE AND DISEASE TO INJURY. A TREATISE SHOWING HOW PERSONAL INJURIES MAY AFFECT VARIOUS DISEASES, AND HOW CERTAIN DISEASES MAY ADD TO CLAIMS FOR ACCIDENTS BY PROTRACTING RECOVERY. By W. Edward Magruder, M.D., Associate Professor of Clinical Medicine, College of Physicians and Surgeons; Visiting Physician, Mercy Hospital and Bayview Asylum; Medical Examiner and Adjuster for Life, Accident, Health and Liability Insurance Companies, Baltimore, Md. New York and Chicago: The Spectator Company. Cloth, \$2.50 net. 1910.

This book is the endeavor of the author to put in convenient readable form the relationship existing between injury and disease, a subject which hitherto has received but spasmodic consideration by medical writers. There are chapters on traumatic pneumonia, tuberculosis, appendicitis, peritonitis, nephritis, epilepsy, apoplexy, meningitis, insanity, diabetes, aneurism, heart disease, nerve injuries, malignant growths following injury, etc. It is a distinct addition to medical literature, and, owing to the thoroughness with which the literature on the subject was exhausted, is assured a frequent consultation by those engaged in accident suits. Each chapter is followed by a complete bibliography on the subject treated.

HIGH-FREQUENCY ELECTRIC CURRENTS IN MEDICINE AND DENTISTRY. By S. H. Monell, M.D., New York. Finely illustrated. New York: Wm. R. Jenkins Company, 851 Sixth avenue. 1910. Price —.

Half of the 450 pages are given to wordy description and defense of electric claims and appliances.

Only eight pages are given to dentistry, and little of this space to electric treatment. The title of the book seems, therefore, untrue.

There are facts and experiences of some value in the book, of course, but it is very unfortunate that the style in which this voluminous writer sets them forth should vary between that of a child's primer and that of a quack advertisement. The printer's work is excellent.

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AN UNUSUAL SURGICAL CASE UNDER LOCAL ANESTHESIA.

By Dr. Guy Steele,
Cambridge, Md.

A PROPER title for this paper would have been: A case of irreducible, congenital, left inguinal hernia in a child of 20 months; with undescended testicle and appendix in hernial sac; complicated with double broncho-pneumonia. Operation for radical cure of hernia, and removal of appendix through left inguinal ring under local anesthesia, with recovery.

The peculiar anatomical findings and the rarity of the operation are, I deem it, sufficient explanation for my determination to publish the case.

Late on the afternoon of Sunday, November 21, 1909, while returning from a visit to another patient, I was asked to stop in to see W. C. H., colored, aged 20 months, and found a small, undeveloped colored child lying in its mother's lap, with temperature of 100, pulse 130, respiration 40. The child seemed critically ill, and a more thorough examination confirmed my first impression, and auscultation revealed a double broncho-pneumonia. The mother agreed to this diagnosis, but said she had not called me in to examine his lungs, but to see his *rupture*, which had been down since Friday morning, and which had resisted the efforts of the parents and those of a physician at reduction.

The hernia, they said, was congenital, and had been coming down and going back until this time without trouble and without pain to the child and without anxiety to them. I tried to reduce it by gentle manipulation and by change of posture, but being unsuccessful, and not knowing whether the collapsed condition of the patient was due to the pneumonia or a possible strangulation of the bowel, I advised removal to the hospital and an immediate operation as the only chance of life, and this chance I plainly stated was a desperate one. To my surprise (and I may frankly say almost to my regret, as I was so little sanguine of the result) they consented, and in an hour's time the child was in the wards of the Cambridge Hospital.

As the child was illegitimate, and the mother not over intelligent,

it was impossible to get family history or previous history of the case beyond the fact that the hernia had existed from birth; that diarrhea and bad colds had been frequent.

Physical examination revealed a marked case of rickets. The head was large and out of proportion to an emaciated body. Fontanelles open, eyes prominent, almost to exophthalmos, teeth all present, no Hutchinson's sign, neck thin. Chest barrel shaped with sternum prominent, as were ribs. Heart sounds normal, though feeble. Fine sibillant rales present over entire lungs, and a well-defined broncho-pneumonia at the base of both lungs posterior. Abdomen much retracted, organs normal. There was a left inguinal hernia with a tense mass filling that side of scrotum. Legs were thin, with a well-marked genu varum. Knee joints large.

The patient was put on the table at 7.45 P. M., and I operated at once, with the able assistance of Drs. E. E. Wolff and E. A. Jones.

With a pulse of 130, respirations 44 and a broncho-pneumonia in both lungs, general anesthesia by either ether or chloroform was out of the question, and at the suggestion of Dr. Wolff I selected novacin for local anesthesia, infiltrating the skin and superficial tissues with 20 M.'s of a one-tenth of 1 per cent. solution.

The usual incision over the mass was made and the dissection to the sac accomplished with some difficulty, as the field of operation was small, and the coverings of the hernia much glued and matted together. When the sac was reached and opened the bowel, though showing evidences of constriction, and with vessels much congested, was in such condition that I returned it through the ring with little difficulty. An undescended testicle was now discovered in the upper part of the sac wall, but as the child was in such bad condition when the operation was begun, I was unwilling to prolong the operation with risk of shock and hemorrhage by dissecting out the testicle and cord or ligating and cutting off the sac, and was about to suture the opening in sac and anchor it in the ring, when Dr. Wolff called my attention to the tip of the appendix protruding from the inner ring, this organ having been partially returned when the hernia was reduced. It may be imagined that I did not welcome the appearance of this new complication. As the condition was before me, I determined to see if I could operate for removal of the appendix without making another incision.

To my great satisfaction it was found that by gentle traction the cecum could be easily delivered through the left ring, and with it an appendix of large caliber, *five inches* long by actual measurement, with short meso-appendix, and bound to bowel throughout its entire length by firm adhesions. The vessels of the mesentery were ligated and the appendix freed to base without difficulty. In passing the last ligature the artery of the base was wounded and a free hemorrhage started, which was soon controlled.

As I was unwilling to run the risk of pain from the cautery or to invaginate the stump without ligating the artery of the base, a No. 3 cat-gut ligature was thrown around the base, the organ cut off above artery clamps, the stump cauterized with pure carbolic and

neutralized with alcohol. The stump was invaginated into the cecum and covered in by purse-string suture, but the caliber of the bowel was found to be so much diminished by this procedure that the purse string was removed and the stump invaginated and covered by two sutures in the peritoneal coat of the bowel. The sac was now closed and anchored in the ring, the wound closed layer by layer with cat-gut and the skin with interrupted silkworm-gut sutures. The child was returned to bed at 8.45 P. M., the preparation, operation and dressing occupying one hour.

During the whole operation the only anesthetic used was the 20 M.'s of the one-tenth of 1 per cent. of novacain infiltrated into the superficial tissues. As far as could be determined, the whole procedure was absolutely without pain, except when artery forceps were tightly clamped on bleeding points somewhat outside of the line of infiltration, and when the ligature was tightly drawn about the artery at the base of the appendix, a nerve evidently being included. Except for a brief and sharp cry at these times, the child was apparently the most unconcerned one present, rolling his eyes from side to side in evident wonder at his surroundings, but giving no further evidence of interest.

The patient was put to bed in good condition, little shocked, and went to sleep promptly. The bowels were moved well under small doses of calomel on the second day. Liquid nourishment was taken with avidity, and indeed during the whole course of the case our only trouble was to satisfy an almost insatiable appetite without overfeeding.

The lung conditions cleared up promptly, the wound healed perfectly and firmly, and the child made an uninterrupted and uneventful recovery, leaving the hospital on December 7 much improved in every way.

I trust that it will not be thought that I deem the results in this case and those in another, which I beg leave to mention, sufficient evidence upon which to base an absolute line of surgical procedure.

They do point most strongly, however, to the fact that in desperate cases, where general anesthesia cannot be used, we can operate with safety, comfort and freedom from pain to our patients and freedom from anxiety to ourselves as to the condition of our patients under local anesthesia in weak and safe solution.

As another illustration, the following case is mentioned:

On February 7, 1909, the late Dr. Percy Stansbury of Crapo, Md., sent to me from Lakesville, Md., J. H. B., white, aged 60, with the following history:

A left inguinal hernia had existed for years, giving no trouble, not preventing work, coming down occasionally and going back easily and painlessly.

The hernia had been down for two days, and had resisted all attempts at reduction, when Dr. Stansbury was sent for, who, being unable to reduce it, at once sent the man to me.

After a ride of 25 miles over wretched roads, on a bitterly cold day, he reached the hospital in a state of utter shock and collapse,

almost speechless from cold; he was blue to his knees. The face was blue and pinched, respiration shallow, pulse quick and almost imperceptible.

During my temporary absence from town my colleagues on the staff at once started vigorous measures to revive him, administering whiskey and cordiac stimulants and surrounding him with hot-water bottles. I saw him that afternoon, and anxious as I was to operate quickly, not knowing the condition of the bowel, I found him too weak. As his condition was somewhat improved at night, he was carried to the operating-room and preparations for the operation quickly made. His condition was still so bad that I was afraid to use general anesthesia, so I infiltrated the skin and superficial tissues with a small amount of 2 per cent. solution of cocaine, determining to start the operation under this weak solution and to change to ether if I found that he could not stand the pain. To my surprise and great satisfaction, except when artery forceps were tightly pinched on the tissues or ligatures tightly drawn, there was no pain and no shock.

The dissection was made, sac opened, bowel returned, sac sutured across and a large piece amputated, and stump sutured in ring. The wound was closed layer by layer with cat-gut and skin with interrupted silkworm-gut sutures. The result was radical cure with uneventful recovery.

I believe that in these cases had I used general anesthesia the patients would never have left the operating table alive. Had the practice of a few years ago been followed, when it was thought necessary to thoroughly saturate the tissues with a strong solution of cocaine, I fear the results would have been none the less prompt and sure. Here only 20 M.'s of a one-tenth of 1 per cent. solution of novacin was used in the one case and 2 per cent. solution of cocaine in the other, and both operations were painless and shockless.

As points of especial interest in the first case I beg to call attention to:

1st. The exceeding rarity of an appendix in a left herneal sac. While cases may be on record, I am unable in a hurried examination of the literature to find one in a child of 20 months.

2d. The rarity of the removal of an appendix through the left inguinal ring. Again I am unable to find a case.

3d. The length of the appendix in a child of 20 months, the organ measuring five inches in length.

4th. The length of the meso cecum which allowed free delivery of the cecum through the left inguinal ring.

5th. The small amount of local anesthetic used, namely, 20 M.'s of a one-tenth of 1 per cent. solution of novacin.

6th. The freedom from pain and shock.

7th. The prompt and uninterrupted recovery from an operation of such severity when complicated with double pneumonia.

"THE ADVANCEMENT OF MEDICAL EDUCATION."

By G. Milton Linthicum, A.M., M.D.,

President of the Medical and Chirurgical Faculty.

ADDRESS TO THE MEMBERS OF THE ASSOCIATION OF AMERICAN
MEDICAL COLLEGES, MARCH 21, 1910.

*Mr. President and Members of the Association of American
Medical Colleges:*

Gentlemen—In the name of the Medical and Chirurgical Faculty of the State of Maryland, I bid you welcome to our city and home. The entire profession of medicine extends to you the glad hand of fellowship, and thanks you for thus honoring Baltimore and Maryland by its selection as the meeting-place of your association.

We feel it truly fitting that you, who represent the very best in medical education, shall be welcomed at this time in our new medical library. From yon wall gazes down upon you the face of one who has been a most potent influence in the uplift of the profession, and we are justly proud that this faculty and fraternity has given Osler to the highest medical honor in our mother country. Then, too, we have as a member of this historical organization Dr. Wm. H. Welch, who today stands pre-eminent as a teacher and investigator, and who doubtless wields a greater influence in the medical profession than any other living authority in America. His supreme merit, both as a scientist and as a man, has been recognized by the entire national profession in his selection as the president of the American Medical Association, the highest honor in the gift of our profession.

This ancient and historic honorable faculty, in whose name we now greet you, passed its one hundred and eleventh anniversary on the 20th day of January. The principles of its charter indicated the dual purpose of its founders, first of "alleviating calamities and miseries of their fellow-citizens," and second for the very purpose for which you have convened here today, to prevent the "citizens from risking their lives in the hands of ignorant practitioners or pretenders of the healing art." This was further fortified by incorporating in its charter the establishment of a board of examiners, "to consist of 12 persons of the greatest chirurgical abilities in the State."

Thus the faculty has always stood for the highest and greatest ability in the profession.

A further reason for felicitation on our part in welcoming you here is as that of a mother welcoming her children to their birth-place, for we feel, indeed, that this great association had in this faculty its conception, and you will pardon me my just pride in recalling to you that the call for the elevation of medical education originated here in Baltimore, and through the labors and efforts of an ex-president of this faculty, Dr. Eugene F. Cordell. A meeting

of prominent members of the profession was called, through his undivided efforts, by obtaining 96 signatures to a petition. This led to a meeting of the representatives of the four medical schools, resulting in the sending of a petition to the various colleges throughout the country, signed by Dr. Aaron Friedenwald, as president, and Dr. Eugene F. Cordell, as secretary. This letter to the schools was sent out March 20, 1890, 20 years ago almost to this day, resulting in the formation of your association at Nashville May 21, 1890. I therefore feel that I may truly call Baltimore your native home, and Dr. Eugene F. Cordell the father of this organization, which now yields the most beneficent influence and is a power in the land. The subject of my remarks, "The Advancement of Medical Education," is, I hope, pertinent to the occasion, if it has no other merit to recommend it.

The practice of medicine, which has for ages been associated with the giving of medicines, is undergoing vast changes. These changes are due to the recognized value by the profession and the public of the preventability of disease. Much of this has been brought about in spite of great opposition on the part of the public, but they now realize its value, and the great majority can be depended upon to uphold the laws enacted to prevent disease. Only recently in our General Assembly there was introduced a bill, at the request of a so-called faunal naturalist, to repeal the law of compulsory vaccination. The bill was very promptly reported unfavorably.

This field of preventive medicine must be cultivated by trained men, and should be a department of medical schools and universities, and be so arranged and taught as to cover the entire field of public, State, municipal and personal hygiene.

This department must and should educate the "biological engineers," those whose duties are to study conditions which militate against or aid in the development of the highest efficiency of the individual, and thereby increase the vitality and strength of the entire people and country.

The people are beginning to realize more and more themselves the value of the agencies of exercise, of good nutritious food, bathing, air and sleep. This opportunity has been neglected in a large measure by our profession, and today we have the chagrin of seeing valued lives committed to the care of professional trainers rather than the medical adviser. This lack of knowledge on the part of the profession upon such matters is due to the fact that it is rarely, if ever, adequately taught in the medical schools. Such a department established in our medical schools would be of inestimable value, and would receive substantial encouragement from the people.

The lack of this one field of education in medical schools is a self-evident conviction that the highest ideals of modern medicine are

not being striven for in a practical way. We must accept what hygiene the youngest biological science has taught, and repudiate the fatalistic doctrine of mortality, demanding a regular, definite sacrifice each year at the present established rate. To the contrary, we have Pasteur telling us that it is in the power of man to rid himself of every parasitic disease. The optimistic writings of Metchnikoff and others in proving the possibility of increasing years of life. Taken thus with the practical results already obtained by preventive medicine, it is evident that all that is needed is education. This education must be first of the teachers and advisers, the physicians, the philosophers of health. The new field of biology, as suggested by Sir Francis Galton, the science of eugenics, the study of hereditary conditions which influence human vitality, has already demonstrated its great value. The research fellowship established at the University of London by him has given us most valuable contributions by Karl Pearsons and other collaborators to the study of human decadence and degeneration. The effect of tuberculosis in the race, the number of offspring comparatively taken, and the proportion of selective mating, so that similars marry.

If these advance movements are carefully studied and conservatively taught, great power for the good of the people in the increase of personal and national vitality will be inestimable. The teachers and investigators should by all tradition and experience be found in the medical profession. The physician, with his keen insight into human frailties and his knowledge of disease, is in a far better position to understand the causes and factors which produce departure from the normal than any other trained scientist. The research work to be done in the Rockefeller Institute, the study under the Russell Sage Fund for Investigating the Diseases of Old Age, and the Memorial Institute for Infectious Diseases, all contemplate the work being done in points of advantage contiguous to the subject of investigation.

The large medical schools, with equipment and means associated with large and diverse hospital advantages, must of necessity do this work, aided, as they will be by virtue of merit and results obtained, by the generosity of friends and endowments, by philanthropic individuals, appropriations by progressive and enlightened States, and by the trustees of research funds. Thus such a policy will in itself be retroactive; it will attract men and means to those places where the facilities are provided, and the reputation so obtained will add to the income and resources by increased student body of a higher intelligence and imbued with the real spirit of the true physician.

To review the advances made in medical research and investigation would be to recount the history of modern medicine. You are already acquainted with the epoch-making work of Pasteur, of Lister, of Koch, of Von Behring, and many others in the study of

the causes of disease. The application of these principles to medicine and surgery have, by the modern scientific physician and surgeon, brought untold blessings to the human family and saved to the nation countless lives.

The treatment of disease by sera and the prevention by vaccination are now as scientifically utilized and with almost the same precision as that of a chemical reaction. The absolute accuracy obtained in suitable cases by the X-ray has made the surgeon as precise and as accurate in adjusting the fragments of a fractured bone as the joiner in fitting two pieces of wood in the manufacture of a cabinet.

The possibilities of replacement of diseased organs in the human animal by healthy ones is more than suggested by the experiments made in the transposition of organs from one lower animal to another. The recent advances in surgery of the brain, the citadel of reason, has opened the vista of the near probabilities of a relief and cure in epilepsy and other allied mental afflictions.

All of these great advances have had the tendency to lift medicine from the dark mysteries of the past to a new and refulgent horizon, for an enlightened people, lay and professional, to gaze upon with wonder, amazement and gratitude. Conjointly with this has the progress been noted in the training of medical men. From the apprentice system of a century ago to the two-year, then the three-year, now the four and five-year college course. From the barber, who might in his leisure hours take a medical course and graduate as a physician, and practice with all the rights of a university-prepared man, today a definite, reasonably prepared, not less than a high-school course is required before being permitted to enter the recognized medical school. Still more is yet to be demanded with all the minutiae, with all the details now required not as a matter of graduation, but as a mental equipment for the well and adequately-trained physician. It is now well recognized that only the trained mind can be expected to master our profession. The physicians themselves demand a higher standard and a higher intelligence in matters scientific.

No longer will the plea be made that the sparsely-settled districts need poorly-trained physicians, because well-educated and highly-trained men will not locate in such places. There are men today of fine intelligence whose love of nature, whose close fellowship with mankind lead them to prefer the country to the urban life. They are today doing as good work, with the same degree of accuracy of diagnosis and treatment, as their city brothers. Further, the spread of the medical society organization, with rapid communication of travel and telephone, has brought remote places to the very door of the large city; thus no longer is a man isolated, though he live in a most distant place.

This inexorable law of progress and evolution in medicine must and will be met by a definite, adequate provision by the teaching institutions. The segregated, independent and unendowed institution cannot meet the conditions which are now essential. The training is now four times the cost of 10 years ago. The actual cost per student, if calculated, giving the teaching body a reasonable compensation, would approximate from \$500 to \$750 per year. While a few years ago the one laboratory, the anatomical, with its several demonstrators, was deemed sufficient in a fairly well-equipped school, today the laboratories needed are six, with well-trained men in charge—men who must devote all of their time to this work. The teaching was formerly done in large classes; now it is, to a large degree, personal, and in consequence thereof a greater number of teachers are required.

The lengthening of the medical course, in my judgment, has reached a point beyond which it seems unsafe to go. The generally accepted theory that the best work of man is done before the age of 40 indicates that we must leave at least 15 years prior to this life period for the advancement of one's individuality and the laying of the foundation for a competency for the care of oneself and his dependents.

Society has a right to demand of every individual, if possessed of a good physical and mental equipment, the reproduction of his kind and the proper care and preparation of their offspring for the future betterment of the human race. It is not, therefore, fair to the individual to demand the expenditure of too many of his years in the preparation of his life's work. It then becomes incumbent upon the thinkers to evolve a plan for the education of men in an adequate way in a reasonable time. For which reason it appears contrary to the economics of the human life to extend the medical training beyond the present generally adopted course of four full years. I can, however, see no reason why the vacations should not be shortened and the time thus increased.

I feel that the demand of a college degree as a requirement is not essential, as it may only carry with it a literary training, which in itself is doubtless of value, yet not commensurate with the value of time spent in its obtaining.

The mere adding of years to the training for medical studies is incompatible with the laws of physiology, and the experience of teachers of science will refute its wisdom. It has been the observation of teachers in scientific laboratories that the graduate of a high school will grasp the details and observe with more precision and draw as valuable conclusions as the student who has spent several years in purely literary pursuit.

The muscles of the musician or physician must be cultivated in all the movements of precision and delicacy before the plasticity is

lost; so also must the living, vital cells of the brain, whose growth in size practically ceases at 15 years of age, and whose density increases and plasticity decreases as old age approaches. The student with the broad general subjects may perhaps make the good, pleasant, agreeable family doctor, but the man whose specialization begins early in life, with the pursuit of scientific subjects, will make the truly scientific, precise, accurate, evenly balanced, keen-eyed and close observer, the eye trained to detail, the ear trained to accuracy, the brain trained to minutiae, will be the successful, renowned medical adviser.

The suggestion of President Nicholas Murray Butler some years since, that the college course should terminate with the sophomore year, and that the junior and senior should be distinctively years of professional education, would force each student to decide for himself on a vocation in life during his sophomore year. Either this view must be adopted, or the first two years of the present college course must be done in the secondary or high schools.

The increased number of medical studies must be met with the lengthening of the professional school course, in addition to the college course; but the course must, as has been suggested, be lengthened backwards into the college course, and the college must provide for the training of their students in the preliminary courses, granting the degree of B.A. or B.S. at the end of their term.

The teaching of such subjects as comparative anatomy, biology, chemistry, physiology and botany should be a part of the college preparatory course, and need not be dealt with in the medical school except as to their relation with research and clinical application. Should such a student who had received this scientific training instead of the usual Latin and Greek course elect to follow pursuits other than medicine, his training would be of equal value to him as a mental gymnastic.

The humanizing of the individual by such a training would be of vast importance to him in any field of usefulness. Could there be anything of greater value to the political economist than to know the relation existing between the animate and so-called inanimate?

The sociologist with the true conception of the evolution of life, the laws of nature, must realize the relationship between individuals and races, peoples and nations.

The divinity student would take the weakness of mankind to be in a sense a physical disease, with spiritual involvement and manifestation. Thus there can be no loss should this training not be followed in the line it would naturally lead, to further biological study, normal and abnormal. Thus it occurs to me that the four-year course should be maintained, and even possibly shortened, and more time left to the pursuit of medical studies. The teaching of these scientific subjects would then of necessity be taught by men specially trained, who devote all of their time and attention to them,

and would be paid salaries commensurate with their labors. This would remove it largely from the medical curriculum per se, and thereby shorten the necessary years in the medical school or give more time to medicine and surgery. The other alternative is to teach such subjects in the first year of the medical schools, increasing the term to five years, but granting one off for previous training if already taken in a preliminary course.

I have endeavored in a cursory way to briefly outline the needs of future medicine. It seems also fitting that I might say something as to the problems in medical education in Maryland at the present time, and to express in the abstract the possibilities of the immediate future and the probabilities of no great distant period. The solution is, indeed, not an easy task, for the diversity of opinion on the one hand to its feasibility and on the other hand as to its real value and necessity.

I therefore request that my remarks be taken with the comprehension of the warning of Marcus Aurelius, "Remember, all is opinion."

The first principle to be realized by all in this State, as in others, is that the readjustment in the intellectual world at large must be compensated and met by a similar readjustment and adoption in the academic and medical world.

Concentration in all matters is a law of modern development, and a high degree of excellence is only to be obtained through the concentrated elements of mental activity, with the proper appreciation of resources.

Throughout the world there has been the concentration and consolidation in all industrial lines; trades organizations, labor organizations, combined manufactories, all obeying a well-defined social economizing law. All realizing the strength of the many when taken as a whole, and the weakness of the individual. Economy, strength and increased efficiency are the three potent factors gained by mergers. There is now a movement to correlate and confederate the various educational institutions of the State.

There exist public schools, high schools, academies, literary colleges, law schools, and some six medical schools, partly supported by the State and partly by the city, some by both, and others by private corporations, receiving State aid, all working for education, but each a separate entity. It is believed that could this whole number of bodies be taken under charge by a liberal-minded, broad and intelligent board of trustees, who would submerge, regulate and bring together the whole system under the caption of a State University, great good could be done the people, much time saved the pupil, and a system of education would result to the benefit and advancement of the entire State. It is, however, realized that in conformity with this thought the first essential step to be taken is

the merging of the predominant, segregated schools of medicine here in Baltimore.

Located in Baltimore, aside from the medical department of the Johns Hopkins University, which, by virtue of its university connection and endowment, is able to fill its halls with selected men and to train and graduate them with a good mental equipment. Its future is well assured, though its work is given some handicap by its none too liberal income.

The three medical schools recognized by the association, the Maryland University Medical School, the College of Physicians and Surgeons, the Baltimore Medical College, also the Women's College, a recognized school, and one of the earliest to adopt the four-year course; the Maryland Medical College, the latter a school of 10 years' life, which is endeavoring to do creditable work, but with limited income, and the Homeopathic School of Maryland, and a disgrace and a reflection upon the laws of the State, the Medico, Chirurgical, Theological College and Law School of Christ's Institution, run by illiterate negroes, whose incorporation papers were signed by a cross-mark.

The three recognized schools and the Maryland Medical College in their combined plants represent at least \$1,000,000, each having a very small endowment. Their student bodies represent at least 1200 students, with an income of about \$180,000 in fees, and receiving usually State aid to the extent of \$4000 per annum each. Each duplicating the course of the other, each duplicating the expenses of administration, and all working independently with an honest desire to elevate the standards with a success that has been marvelous and a credit to the respective faculties. Yet can this advance movement continue in our schools? Can the faculties maintain their present standing and follow the demand for a higher preparation and higher efficiency?

The recent advances in the elevation of standards of medical education are so positive that the only hope and solution for the medical schools of this city is the absolute union of them. The agencies throughout the land for higher standards are as sure of bringing about a condition where the school cannot stand and maintain a reputation such as the men now associated with them demand in conformity with their professional standing in the community.

The schools that do not seek the haven of solidarity, homogeneity, unity and secure organization will be as impotent as the single snowflake without the strength of the multitude. This is the day of progress, of high efficiency and strong vitality, and this in the industrial and commercial world has been made possible by strong mergers and combines.

Whether such monopolies and organizations, unions and communities are productive of such dominant control, that harm is often done the individuals in greater proportion than the good done the whole people, I am not prepared to argue. But there can be no

doubt in the mind of anyone, lay or professional, that a higher medical equipment will inure to the good and benefit of the whole people and to the harm of none.

This reason is sufficient in itself in predicting the ultimate elimination of the weak school and the building up of the medical school as an integral part of a State University here in Maryland. The mere affiliation with a university is itself only a convenience, and the benefit of the same trustees not obtained. This demand of the best in medical training, as in all other things, is the real basis of the increase of standardization. The factors which will bring it about are already at work, and the results accomplished during the past few years are simply astounding.

Such agencies as the medical faculties themselves, the American Medical Association, the examining boards and the general trend of education is for better and higher things. The Carnegie fund for investigating education and its best methods will be a strong agent in this fight.

Mergers in five different centers demonstrate the recognition of the need of such consolidation—Louisville, Cincinnati, Iowa, Los Angeles, Leland Stanford. Five years ago 166 medical schools were to be counted in the United States; today, 148; 43 were closed and 25 new ones organized. Of the 43 closing, 16 went out of existence entirely, while the balance merged and formed 12 large, well equipped and efficient schools. The increase of the entrance requirement by numerous State boards is such that the schools will of necessity have smaller classes. Then is it not wise to send out the warning to various educational institutions, the great diminution of disease, and the curtailment of the general practitioner's income?

Only a few days ago I was talking to a prominent member of our profession, who practices with his father, who told me 10 years ago the income from typhoid fever alone was about \$1500 per year; today it will average about \$300.

The number of medical students will decrease because of the increased standard and corresponding increase in cost, and many more will be discouraged by the family physician in their desire to study medicine.

The modern method of teaching medicine with numerous teachers, expensive laboratories and equipment, makes the yearly cost of a medical student's training prohibitive to many, so that it will become impossible to collect the fees, as the average man is unable to pay this expense. It becomes incumbent, therefore, with the present management to serve without pay.

With a board of trustees covering the entire system, endowments could be secured, while no one gives to an institution which they believe, although erroneous, is for the good of the board of directors. A large institution would receive the help and sympathy of the citizenship of the State; the Legislature would appropriate

generous moneys for equipment and maintenance here as they do in other States. The need of such endowment is apparent to everyone, and it will come when the people realize that they have an integral part of their educational system, a university which ranks with the best in the land.

The people will feel a sense of proprietorship and sympathy with all its workings.

The whole community at large will realize the bigness of such a medical department; the laboratories combined in suitable buildings all working under a directorship will bring the results of concentration of mind and energy that will surpass the proudest expectations. The combined hospital facilities will give to the student a training equal to the best of the land. The student in his last year should live as a dresser or assistant in the hospital.

All hospitals and dispensaries receiving aid for the care of the sick either from the city or State should in return open their doors to the training of medical men. The large State hospitals for the care of the insane and epileptic would furnish material to the student for the study of these diseases. Research work for those who desire to delve into the mysteries of the human mind gone awry would be made possible.

We today know the cause of many diseases, yet the working of the vital nerve forces is as little understood as the mysteries of the hereafter. Let one but stop and think of the great burden that would be lifted from the hearts of those whose dear ones are bereft of reason, and from an economic standpoint let the State and the world realize that mental diseases are increasing, and the solution not even conjectured.

The humanitarian institution for the care of the insane has lengthened the life of the patient, so today with the increase of the cost and the increase in the average life of the insane, it increases rapidly the burden upon the people.

The residency of students in the State hospital for tuberculosis would give an insight into the various phases of this disease, and possibly would result in greater progress in the study for its cure and prevention.

Thus can only good come to the people from better doctors, better institutions, better care of the patients, even far beyond this the possible development of the research worker, on whose soul is stirred, whose mind is trained and whose heart is big. Should such a system lead to the discovery and development of another Lister, a Koch or a Metchnikoff, the good to humanity could not be measured in our day or world, but its benefits would extend to the end of time. The practicability of such a merger could be easily evolved if such schools would leave the question of self-interest, and with a result that would work no injustice or unfairness to any teacher in the schools.

Let there be a trusteeship of the representatives from the several faculties, they to take over all the holdings and to manage the affairs, adding to the board men of ability, efficiency, business and

executive qualities, who will co-operate with the medical men in the management; thus the welding together will gradually be brought about, with the relationship of each teacher preserved. The field of teaching is so large that not a teacher need be displaced, but every one will be needed, as the teaching will necessarily become more personal. The clinic, medical and surgical, will be attended by small groups, in close proximity to the patient; each teacher will be strengthened by the queries of the class, and each class taught by the sense of seeing, hearing and touch, instead of the former two from the long distance amphitheater.

As the men retire from the faculty their places may be filled or not, as the judgment of the trustees may elect to do. Such schools should pay well-equipped men for teaching laboratory studies, and the men who receive large fees, in conjunction with their clinical branches, should be paid less if at all. Each should receive commensurate with advantages he gives or receives from the institution. Such consolidation could only result in good to all; neglecting to do so will result only in postponing the inevitable. Today Maryland schools rank well throughout the land; let not this reputation be beclouded by crippled resources and illy-equipped graduates, who will eventually come to schools not maintaining the highest standards.

Such combination would eliminate competition, expense of administration, promote higher standards and attract a higher grade of students. The unsurpassed clinical possibilities would be features which would attract students from all parts.

I would at the same time establish, as in New York, an examining board, before whom all candidates should appear and give evidence of training before being allowed to study medicine; indeed, the other professions should also be regulated.

All candidates to practice medicine should appear before the State board and give proof of their ability and qualifications as a regular physician. This should include every sect of practitioner, homeopathic, osteopath, the Christian Scientists, and what not.

A most important factor in advancing medical education is by the medical society, which by its library continues to promote the habit of reading and study; by its meetings brings together men and elevates their minds and softens their hearts, smooths away jealousies and promotes harmony. It is the clearing-house of erroneous impressions and concepts, and the storehouse of scientific knowledge. It is the post-graduate school of the students who are alert for the advancement of medicine and science. The hospitals of other cities visited and other operators and clinicians seen would aid and develop our knowledge. The general meetings of the State and National Association lift each of us away from our little world and show how vast are the number of workers in the vineyard of health and happiness.

Professional Building.

HISTORICAL SKETCH OF DR. ELISHA PERKINS, INVENTOR OF THE METALLIC TRACTORS.*

By Joseph T. Smith, M.D.

ELECTRICITY is the most wonderful and subtle force with which we have to do. In former years, even more so than today, its varied and almost magical manifestations made a deep impression upon the minds of men and led them to expect it to accomplish marvelous things, and that expectation has in no small degree been realized. Not content with observing and studying the actual phenomena of electrical activity, some exaggerated the result or, drawing too freely upon their imaginations, attributed powers to the agent which it did not possess.

Beyond the time covered by history or legend, it was known that the rubbing of amber would impart to that substance a new property, causing it to attract and repel light bodies. Thales of Miletus noted this phenomenon, and both Theophrastus in 321 B. C. and Pliny in 70 A. D. mention the power of amber to attract straws and dry leaves.

The history of the growth of our knowledge of electrical phenomena is full of interest from a medical point of view, as it is also full of the vain imaginings of men; we can learn from it many lessons of the honest, if, at times, misguided strivings of men after knowledge, and at the same time of the low depths to which men will descend for the purpose of obtaining money or of becoming notorious. It is, however, our purpose this evening merely to recall to your minds a few historic facts by way of explanation.

Stephen Gray in 1720 published his first paper showing that electricity could be excited by feathers, etc., but he made his epochal discovery in 1729, when he found out the conducting and non-conducting properties of bodies. Ten years later, in 1739, Dufay discovered the existence of two kinds of electricity, which he named Resinous and Vitreous. Soon following, in 1745, came the discovery that electricity could be stored up, and the Leyden phial or jar was given to the world. Six years later, in 1751, the great Franklin came upon the stage, and his experimental work is known to us all. Up to this time the medical aspect of electricity and its effects upon the human body do not seem to have attracted much attention. It was, therefore, another epoch-making period when Galvani, in 1791, directed attention to the effects of electricity upon the muscles of frogs. "The arc he constructed of two different metals, which, placed in contact, the one with a nerve and the other with a muscle of a frog, caused contraction of the latter." (Encyclopedia Britannica, Ninth Edition.)

From the time Galvani taught us the peculiar electrical phenomena which are still known by his name, up to the present, our knowledge of the manifestations and of the peculiar conditions

*Read before the Book and Journal Club, Medical and Chirurgical Faculty, upon the occasion of the presentation of a set of Dr. Perkins' Metallic Tractors to the Medical and Chirurgical Faculty of Maryland by his great-grandson, Mr. Elisha H. Perkins of Baltimore.

under which alone electricity will work has so greatly increased that it is not easy for us to place ourselves in thought back in those early days when but little was known, and that little imperfectly, and think of the subject from the point of view of the men who lived in the eighteenth century.

So strange and out of apparent analogy with what was going on in the world about them were the manifestations of electricity that some men ascribed the phenomena to supernatural powers and were much more apt to exaggerate than to belittle what they saw. Indeed, in spite of the comparatively complete knowledge of today, this age is by no means free from the faults of exaggeration.

It is not possible to estimate fairly the work of the men in the eighteenth century unless we disabuse our minds of very much that we now know and unite with what usually goes with ignorance, fond anticipation and exaggeration.

The eighteenth century may not inappropriately be looked upon as the dawn of electricity. It was toward the end of that century, in 1778, when men's minds were filled with the wonders and power of the new force, that a man came to Paris and threw the city into a state of excitement over a new method of treating disease by a subtle influence thought to be analagous to, if not identical with electricity. Animal magnetism found in Mesmer a devoted and notorious disciple. A glance at his methods may not be out of place: "Appreciating the effect of mysterious surroundings on the imagination of his patients, he had his consulting apartments dimly lighted and hung with mirrors; strains of soft music occasionally broke the profound silence; odors were wafted through the room, and the patients sat round a kind of vat in which various chemical ingredients were concocted or simmered over a fire. Holding each other's hands or joined by cords, the patients sat in expectancy, and then Mesmer, clothed in the dress of a magician, glided amongst them affecting this one by a touch, another by a look and making 'passes' with his hand toward a third." (*Encyclopedia Britannica*, Vol. XV, ninth edition, page 277.) That the people were ready for a treatment which influenced them partly through their imaginations and partly through the personal influence of the man himself is shown by the large crowds that sought his apartments and the marvelous cures the people credited him with.

We must keep in mind the facts just noted and place ourselves in the midst of such surroundings if we would clearly understand the character and work of Dr. Elisha Perkins, the inventor of the tractors. He cannot and ought not to be judged by the conditions of today.

Dr. Elisha Perkins was born at Norwich, Conn., January 16, 1741. "Having descended from respectable ancestry, who long possessed a distinguished influence in the medical profession in that vicinity, he attained considerable reputation and popularity. His acquaintance was very extensive, and his great liberality and social habits allured to his house gentlemen from different parts of the country, and his inquiring mind seemed ever to search for something new in every sphere which could better the condition of the human family. * * * He made great sacrifices in establish-

ing and supporting an academy in Plainfield and other improvements in that town. He was esteemed a man of strict honor and integrity of character." (American Medical Biography, James Thatcher, M.D., 1828, page 422.)

"Elisha Perkins was a shrewd son of Connecticut, born about the middle of the eighteenth century and crudely trained for the practice of medicine by his father, himself an excellent physician for his time. 'Doctor' by courtesy, as were most of his cotemporaries, the younger Perkins became a successful and widely-known practitioner. Six feet tall, handsome, of commanding personality and full of that intangible something which women call charm and men call magnetism, he became in a few years one of the most popular and successful doctors in Connecticut. * * * He was greatly impressed during his career with the sense of benefit and well-being which his forceful presence and kindly ways imparted to his patients, especially when he had occasion to lay his hands upon them in the course of making examinations or feeling the pulse. This effect he thought to be due to some occult magnetic influence, and, bearing in mind Dr. Franklin's researches, he persuaded himself that by combining together certain metals a more efficient magnetic or electro-therapeutic agent might be secured than by mere human touch. * * * The man does not seem to have lost cast. * * * We read of his traveling up and down the country lecturing and practicing and making a great commotion. * * * The fame of the man reached Europe." ("A Narrative of Medicine in America," J. G. Mumford, M.D., page 286.)

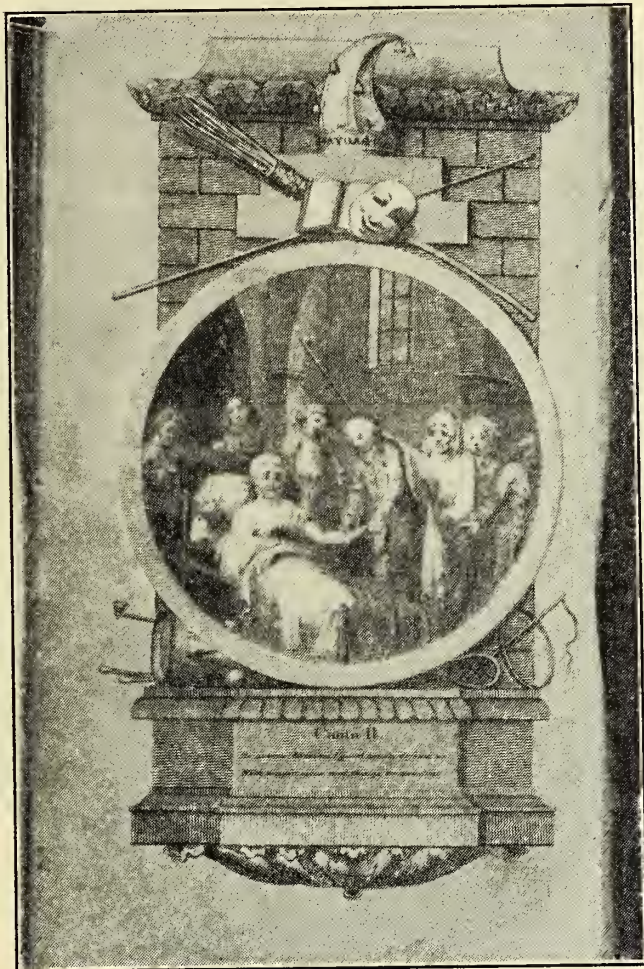
"Dr. Elisha Perkins founded and largely sustained the Academy in Plainfield, which is still flourishing. As there was no other resort for them, he opened his large house for the scholars from other towns, and at times his family numbered 50. * * * Dr. P. often received invalids into his family. * * * One of them was the Hon. James Burrill * * * member of Congress and grandfather of George William Curtis; another the Hon. Calvin Goddard, sent to Congress." ("Douglas Genealogy," 1879.)

Dr. Elisha Perkins "was one of the incorporators of the Connecticut Medical Society, but after the invention of his tractors did not long remain in that society's good graces. On May 17, 1796, the society passed a vote that whereas it having been represented to this society that one of their members had gleaned up from the miserable remains of animal magnetism a practice consisting of stroking with pointed metallic instruments the pained parts of human bodies, giving out that such strokings will radically cure the most obstinate pains to which our frame is incident, causing false reports to be propagated of the effects of such strokings, especially where they have been performed on some public occasions and on men of distinction, and so forth, any member of the society practicing such delusive quackery should be cited before a meeting of the society and show cause why he should not be expelled.

"At the May meeting, 1797, Dr. Elisha Perkins was formally expelled from the society for his practices."*

*The doctor refused to divulge his secret, and in place of selling his tractors outright only rented them for a limited space of time.—*Norwich (Conn.) Courier*, November 5, 1909.

From the same paper and date I quote the following: "The Connecticut Historical Society has recently received a copy of Thomas Green Fessenden's satirical poem, "A Terrible Tractoration," which was written as a defence of Dr. Elisha Perkins' system of curing by the application of metallic tractors to the diseased parts of the body. The poem is in four cantes, and is a severe criticism on the methods of the leading physicians of the early part of the nineteenth and the latter part of the eighteenth centuries. Back of its publication lies a history of medical quackery during the early part of the nineteenth century. * * * Fessenden wrote under the nom de plume of Christopher Caustic. * * * The



TERRIBLE TRACTORATION

by

Christopher Caustic (T. G. Fessenden, LL.D., Walpole, N. Hamp.) 1802.

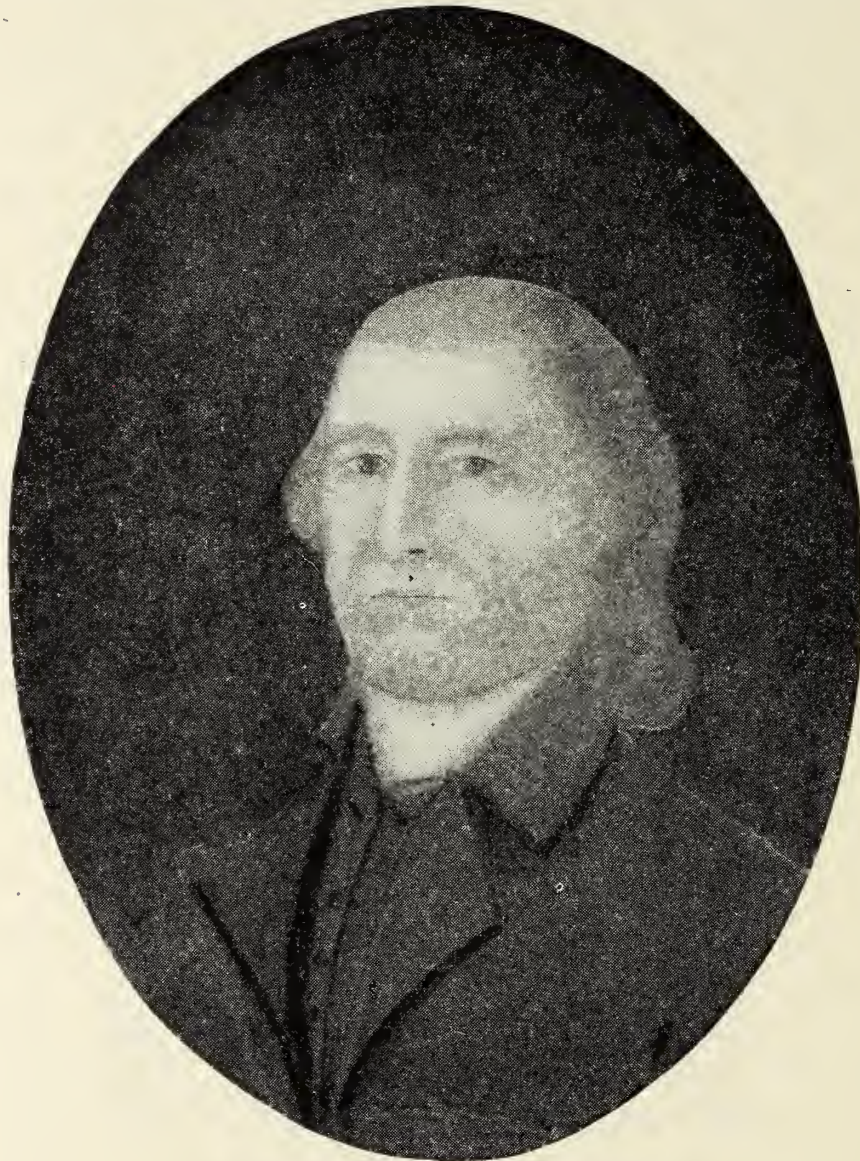
The learned physicians pine and hunger
The while a spruce young patent-monger
Contrives to wheedle simple ninnies
And tractorize away our guineas.

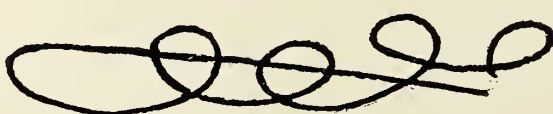
satire is one of the most caustic ever published, and provoked a sensation. Copies of it are very rare, and officers of the Connecticut Historical Society feel that it is to be congratulated on coming into possession of it. The society also possesses a set of metallic tractors, and they will be again shown to the public after the repairs to the building are completed."

Dr. Perkins made the tractors at his home in Plainfield, Conn., in a small furnace concealed in the wall of his house by sliding panels. He kept their composition a secret and refused to sell them, only renting them for a limited time. The house with the furnace in the

wall is still standing, and in a good state of preservation. The doctor obtained a patent for his tractors, which was signed by George Washington himself, is still in the family, and is one of their most valued possessions. The tractors were first introduced in 1796.

Dr. Perkins never left this country, and seems to have made the tractors famous by going about lecturing and treating the sick.



Nathaniel Perkins


During the War of the Revolution Dr. Perkins was a surgeon in one of the Connecticut regiments, going to Boston in January, 1776.

"It is to be considered a singular and unaccountable circumstance that the remedy should have been consigned to oblivion. Is it within the bounds of probability that the vast amount of authenticated evidence that has been produced should be resolved into a

delusion, a mere phantom of the imagination? * * * If, therefore, Perkinism has shared the fate of animal magnetism, there is no sufficient reason for supposing that its discoverer should be placed in the same class with Mesmer, as he undoubtedly was a man of honorable principles and character. Dr. Perkins directed his benevolence to another object of considerable importance in medicine. He introduced into practice a remedy consisting of a combination of the vegetable with muriatic acid in the form of common vinegar saturated with muriate of soda."*

"When yellow fever began to devastate the large cities of America he entertained the idea that, amongst other remedies, sufficient trials had not been given to powerful antiseptics, and as he conceived it the duty of a medical man to run every hazard where the least ray of hope beamed, he resolved on visiting the disorder. Accordingly in 1798, on receiving an invitation from the Board of Health at New London, where the fever was raging, he repaired thither and thought he witnessed good effects from a preparation of common vinegar saturated with marine fat, or muriate of soda and diluted with three-fourths its quantity of hot water and administered warm; a remedy which he had used with great success in dysentery and scarlatina anginosa, which had been very prevalent and fatal in the New England States some years before. But as the fever had nearly subsided on his arrival, he did not meet with cases enough to authorize anything conclusive. The disease still remained in Boston, a distance of about 100 miles. He instantly went to that city and notified the poor that he would attend them gratis. There, however, he had not opportunity of putting any remedy to the test." (Small book in the possession of Mrs. R. H. Kilpatrick, title page torn out, page 27.)

"When that dreadful scourge, the yellow fever, raged in New York in 1799 Dr. Perkins, unmoved by entreaties of his friends and his own imminent danger, left his seat in Connecticut and went to New York, a distance of about 200 miles, chiefly with a view to rendering service to the poor, a class of persons necessarily the most distressed. He continued his exertion with unremitted assiduity for four weeks, when he himself caught the fever, and, being previously exhausted with fatigue, survived but four days, and died at the age of 59." (Account of Perkinian Institution, page 6.) He died September 6, 1799.

The tractors were introduced into Europe at Copenhagen in 1798, they having been procured in America by a Danish gentleman, who, upon his return to Denmark, gave them to Drs. Hernholdt and Rafn, two eminent surgeons of the Royal Frederick's Hospital. At Copenhagen was first introduced the term "Perkinism," which the professors used in honor of the discoverer.

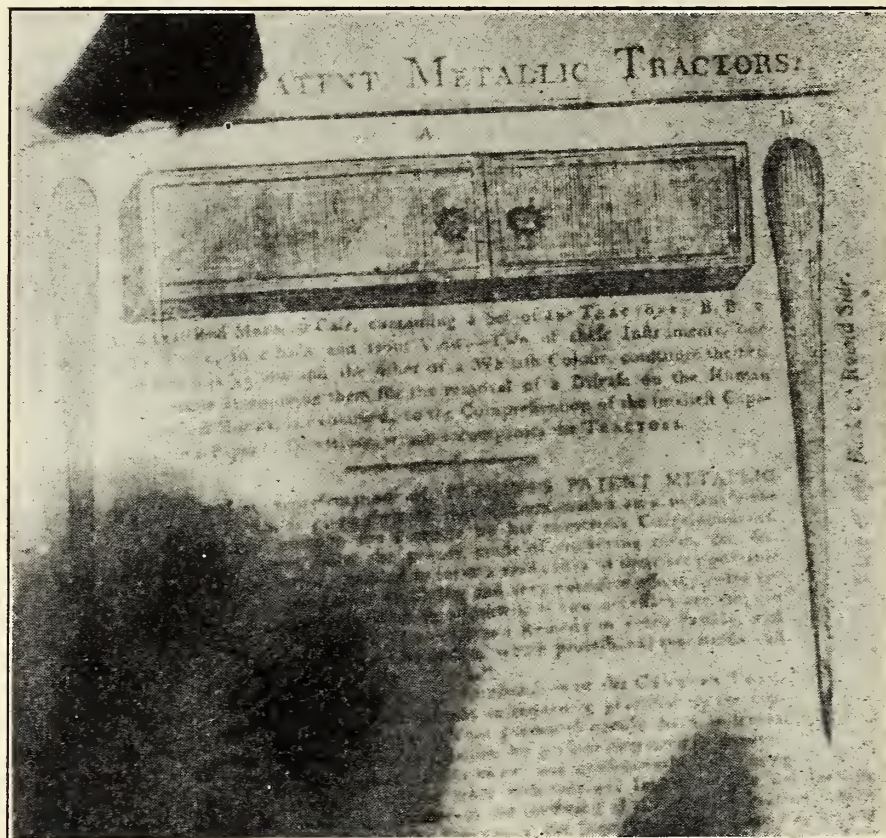
About the time the tractors were introduced at Copenhagen the son of the discoverer, Mr. Benjamin Douglas Perkins, M.A., ar-

*This remedy is the same as is recommended by Dr. Wright of Jamaica, except that the acetic is substituted for the citric acid. This, diluted with three parts of hot water in the dose of a tablespoonful, he administered with great success as a powerful antiseptic in the low state of dysentery and ulcerated sore throat.—(*American Medical Biography*, James Thatcher, M.D., 1828, p. 422.)

rived in England, and, after securing a patent, immediately published a tract on the discovery.

In 1804 the "Perkinean Institution" was opened in London on Frith street, Soho Square.

It will be seen from this brief review that Dr. Perkins, living at a time when electricity engaged the attention of scientists, and being a man of keen observation and on the watch for anything that would benefit his fellows, was just the one to take up and investigate the medical bearings of electricity. If to this is added the interest manifested in animal magnetism and the belief on the part of many that it was electrical in its nature, indeed the name implies



PERKINS' METALLIC TRACTORS.

that, we can well understand how it came about that Dr. Perkins was led to have faith in the new treatment. The records show that he was a man of strong character and a kindly nature, and exerted a great influence over his patients. Under such circumstances and conditions it is not hard to understand why he had faith in animal magnetism, nor is it hard to understand how, with Galvani's work and Franklin's experiments fresh in mind, that he should conceive the idea that if metals could influence the muscles of a frog's leg, why could not they also assist the hands in animal magnetism? It is, therefore, not difficult to see how the invention of the tractors came about. Having made what he thought an important discovery, he kept it a secret and refused to sell the tractors. Further than this he does not seem to have gone, according to the records, in violation of our code of ethics. He had great faith in his discovery, and went about giving the instruments the full weight of his influence as agents for the cure of many diseases. It is not known what he received as rental for the instruments, and the assertion that he

made a handsome sum from them does not seem to be justified. In all probability the fact that his son sold them for five guineas a pair led to the statement. He was expelled from the Connecticut Medical Society, as we have seen, not, however, for a violation of the code of ethics, but because "he had gleaned up from the miserable remains of animal magnetism a practice of stroking with metallic instruments." He was expelled for his faith, and that he did not lose caste is shown by his being called upon later by the Board of Health of New London to help them in their battle with yellow fever by the use of a remedy of his discovery. He was willing to make any sacrifice and take any personal risk for the benefit of his fellows. The records show that he died for the faith that was in him. He was willing to risk his life because he believed he had a remedy which could control or destroy a great scourge, and it would seem that no further comments were needed to show the true character of the inventor of the tractors. At the time of the introduction of his instruments into Europe, Dr. Perkins was busy fighting the yellow fever, for it was at that time that the New London board called for his services. The year before his death, and while his interest was centered in yellow fever and its treatment, the notoriety of the tractors began, and he must have had little or nothing to do with the matter. It was not until about the time of his death, or more likely afterwards, that the word "Perkinism" was introduced, and he clearly had nothing to do with it. He had been dead four years before the "Perkinean Institution" was opened and the campaign entered upon by his son that gave the tractors such an unenviable reputation and led Dr. Holmes and others to cast at them the shafts of their ridicule. You have heard and can read from many sources the history of the tractors after the death of their inventor. We are concerned only with the life and history of the man who made them. We have presented to you all we have been able to gather of the life and character of Dr. Elisha Perkins, and it seems fair to say after the review that he was an honest, conscientious man, possessed of a strong character and a determined will; that he was full of faith in what he believed to be right; able and anxious to impress others with his beliefs. As there were no medical colleges to grant degrees, he, like most of his profession, was a "doctor" because he studied and labored as such, and thus medical ethics and refinements, as we know them, did not exist. It was a time of trial and experiment. He is not credited with adopting any such methods as we have noted in the case of Mesmer. Had he thought such desirable, or had he been an impostor, from what we know of the character of the man, he would not have hesitated in adopting them, and that to the fullest extent.

Had it not been for the work of the son after his father's death, instead of having the discovery given a place among the quackeries and impositions of the day, it would have been looked upon as the result of an honest striving after knowledge with a view to benefitting mankind, and as such I present this set of Perkins Tractors to the Medical and Chirurgical Faculty of Maryland from his great-grandson, Mr. Elisha H. Perkins of Baltimore.

THE NEWER METHODS OF TREATING FRACTURES.

By Alexius McGlannan, M. D.

THE open treatment of recent fractures was discussed in this *Journal's* Review in Surgery for January, 1909. Since that time the subject has attracted much interest, as is indicated by the number of papers published in various journals. A careful study of the opinions expressed by the several authors, as well as my own experience, leads me to repeat the conclusion published a year ago, namely, "Whenever a good functional result cannot be obtained by closed methods without considerable deformity, an operation should be done, if the general physical condition of the patient is not a contraindication."

In the recently published papers one notes the firm conviction of the authorities that the treatment of fractures is a serious problem, and one which demands the most expert knowledge on the part of a skillful surgeon.

The laity and many physicians, too, feel that the treatment of a broken bone is a simple matter of applying a few sticks and bandages. The surgeon, as a rule, is not called in to see the recent injury, and therefore his experience collects a large number of fractures with various grades of deformity. For most fractures the question is not one between open or closed methods of treatment, but rests rather on the knowledge of the attending physician regarding the proper means to employ in order to reduce the fracture and apply the dressing. "One who does not understand the non-operative treatment of fractures is not qualified to treat one by operation." (Bloodgood, *Progressive Medicine*, December, 1909.)

Stimpson (*Jour. Amer. Med. Asso.*, Vol. LII, page 656) opposes the operative treatment of fractures. Freeman's views (*Surg. Gyn. and Obstet.*, Vol. VIII, page 120) indicate a general affirmation of our conclusion given in the first paragraph; but he adds a warning with reference to delayed union and sepsis. In my own cases neither of these complications have occurred, but I know that either may result from imperfect technical methods.

I wish to repeat, therefore, the warning about this method and its difficulties. The open treatment of fractures is not a royal road to successful results. There are many things other than the operating-room details to be considered and carried out. The surgeon who operates on a recent fracture assumes the responsibility of obtaining a better result than could be expected with the use of closed methods. This means that he must be ready and able to carry out all the valuable means of after-treatment, which contribute so much to the good results of any method employed, namely, massage, passive movements, hydrotherapy, etc.; in short, every variety of aid that will retain the nutrition and elasticity of the soft parts and preserve the mobility of the joints during the period of fixation, so necessary for the healing of broken bone.

Furthermore, these methods must be carried out at the same

time that an extensive wound is being brought to firm healing by primary union. To obtain this primary healing and secure a bony union in all cases will often try the resources of a master of technique, who commands the services of a corps of diligent and expert assistants in a well-equipped hospital. Fortunately, the operation for the cure of a recent fracture need not be done immediately after the injury. Uncomplicated fractures never require an emergency operation, and often a delay of from three to ten days is a real advantage. Therefore, there is always time to get the patient to a suitable hospital, and after his arrival to make proper arrangements for the operation without any sacrifice of equipment on account of lack of time for preparation.

The operation must be aseptic, the handling of the tissues gentle, and hemastasis must receive the closest attention. I am inclined to believe that more of these wounds break down on account of the post-operative tension produced by uncontrolled bleeding than fail to unite on account of infection. These bone operations are a test of technic. A certain amount of oozing is unavoidable, but with asepsis may be taken care of by means of a small drain. Any considerable hematoma, especially if it is situated in the muscles or in the subcutaneous tissue, is sure to occasion subsequent difficulties.

Myositis fibrosa and ossifying myositis are among the possible results of an intermuscular hematoma, and impair the activity of the limb.

If the soft part wound does badly, non-union of bone, with or without osteomyelitis of the fragments, may result. Bone infection is a serious complication, recovery from which follows only after a long course of conservative treatment. Not until healthy bone has been restored may the original operation be repeated with any hope of success, and then the difficulties are increased by shortened muscles and general scarring of the soft parts.

Nail Extension in Fractures.—The most novel communications concerning fractures published during the last year were those on direct extension by means of nails driven into the bone itself. Quite an acrimonious discussion has arisen on the question of priority in the use of the method. Codivilla of Bologna (*loc. cit.*), Steinman of Bern, (*Zentralblt. f. Chir.*, 1909), Wilms (*Deutsche Zeitschr. f. Chir.* bd. 92) and several others have written on this subject. At the German Surgical Congress for 1909 Ausschütz of Kiel gave an address on the method. A short paper by this author, and translated by Potts of Chicago, is published in *Surgery, Gynecology and Obstetrics* for April, 1910.

The great advantage of this method over the older one, of extension by means of adhesive plaster applied to the skin, lies in the fact that the pull is made directly on the skeleton. Consequently, the force required to overcome overriding is less, and the possibility of accurate approximation of fragments is greater. At the same time the danger of overweighting the soft parts is eliminated.

The technic employed is simple. With aseptic precautions nails are driven through the soft parts directly into the bone below the seat of the fracture. Ordinary flat or angular nails may be used,

or a better plan is to use a long drill, that is passed through the bone from one side of the limb to the other and allowed to remain. The drill may be introduced through a small incision in the skin, made under cocaine, and except for the momentary contact with the periosteum, its passage will be painless. Some care is necessary, however, to protect the wounds of entrance and exit from infection, and even more precaution, to avoid an infection as the drill is pulled through the bone in its removal after the extension is no longer required.

To avoid the latter possibility, Becker has devised a drill, the blade of which is made up of two pieces united by a screw thread. When the removal of the drill is desired each end is turned in an opposite direction until the union is unscrewed, and then each of the pieces is removed from within outwards.

Kirschner (*Beitrage z. Klin. Chir.*, 1909, Vol. 64) follows Codivilla, and recommends a drill be passed through both fragments of a fracture, and that extension and counter-extension be made by rigid bars placed on either side of the limb and connecting the ends of the drills. By this means all traction on a joint may be avoided.

Traction on a joint during extension treatment is always a danger, and is the cause of many of the unpleasant sequelæ of fractures. This is especially true of the knee-joint. Relaxation of the knee and a number of painful and disabling internal derangements of the joint have been observed following the extension treatment of a fracture of the femur.

Commenting on Huntington's treatment of fracture of the femur in the MARYLAND MEDICAL JOURNAL for January, 1909, I pointed out this fact as a possible danger of his extension.

Auschütz mentions also that the knee does not stand extension well.

My own experience with direct extension is limited to one case. This time we used the method in order to make extension during the operation for plating a recent fracture of the shaft of the femur. A specially constructed drill, with a blade 17 c. m. long, was passed through the lower end of the femur a few centimeters above the condyles, and traction made by means of a gauze rope passed over the front of the thigh and around the projecting ends of the drill. In this way no pressure was brought to bear on the popliteal space, and the danger of injury to the vessels, therefore, was avoided. When it became necessary to make traction, in order to bring the overriding fragments into apposition, preparatory to fixation, we found that the degree of force required in the pull was very much less than that used with indirect extension.

In our older cases this traction was applied through a rope of gauze fastened by a clove-hitch around the femur just above the condyles. The utmost force of one, and often of two men, was required to pull the fragments into apposition. In this one case, on the other hand, although the patient had very strong muscles, the fragments were brought into apposition by the pull of a single individual using only one hand. The assistant who made this traction used his other hand to make the rotation and other movements required.

HAHNEMANN.

(1755-1843.)

FOURTEENTH OF A SERIES OF ESSAYS ON THE HISTORY
OF MEDICINE FROM THE EARLIEST TIMES.

By H. M. Cohen, M.D.

CHAPTER XIV.

SAMUEL HAHNEMANN was responsible for the greatest secession in the history of medicine. Other teachers have inaugurated novel systems and new departures, but it was left to the founder of Homeopathy to establish a school that has not only outlived its creator, but, in a somewhat altered form, still survives.

Systems innumerable have been born and have prospered in their time, but none other has so greatly affected the parent body.

Homeopathy has proved itself to be the only schism able, as such, to thrive. Hitherto every important difference of opinion had been threshed out within the great regular school, and the new teaching was either adopted as a part of the whole, or was allowed to sink into oblivion.

Not so with Homeopathy. From the very first it was taken up by a number of ardent and energetic enthusiasts, and, although more than a century has passed since its founder first elaborated his theories, it is still of sufficient importance to be reckoned with.

Hahnemann was born at Miessen, in Cur-Saxony, Germany, on the 10th of April, 1755. His early education was received in his native town, and, with a capital of 20 crowns, presented to him from the scanty savings of his father, he set out for Leipzig, where he was enabled, by means of his earnings as a tutor of French and German, to take up the study of medicine.

Notwithstanding his exceptional ability as a linguist, he was compelled, owing to his very limited income, to accept the offer of Baron Bruckenthal to become his medical attendant and librarian, and, after spending two years in this position, found himself able to complete his medical course.

On the 10th of August, 1779, he received his degree at Erlangen.

We next find him back in his native Cur-Saxon, and for a time he practiced his profession in Hetstadt. Soon finding the field too limited, he moved to the larger town of Dessau. Somewhat later he was offered (and he accepted) the Government position of District Physician at Gommern, near Magdenburg. Here he met, courted and married Henrietta Bucklerin.

Marriage developed in him an ambition for advancement, and giving way to the inducement of a *locum tenens* offered to him by Dr. Wagner at Dresden, he moved to that capital, where, during his four years' residence, he wrote a number of important

treatises on chemistry. Still he wandered, and at the age of 34 we find him back in Leipzig, where he settled down to the work of his life.

In his "Introduction to the Organon of Medicine," Hahnemann gives the history of his discovery.

He had been engaged in the translation of Cullen's "Materia Medica," when he became interested in the action of cinchona bark in curing the ague. For the sake of experiment, he took four drams of the bark on successive days, and although he was in his usual good health, he made the discovery that the drug had caused him to suffer from a violent attack of the ague. Upon further investigation he found, as he declares, that other drugs had the same history.

If, he reasoned, certain drugs which are successful in the treatment of certain diseases, will produce the very same conditions as the disease itself when taken into the system by the healthy individual, then there is the principle involved that "like will cure like." If, for example, ague is cured by a drug which, when taken by the healthy individual, causes an ague, and the same can be proved to be true of other drugs, then, all one has to do to find a successful cure for a condition is to discover a drug that, when given to the healthy individual, will cause that same condition.

He found that arsenic had also long been regarded as a cure for ague. He discovered that when given in large doses arsenic would, in itself, cause similar symptoms.

In treating scarlet fever he employed belladonna successfully, because, he declared, that it was the one drug which, when administered to a healthy person, would produce symptoms which most nearly simulated that disease.

Having established to his own satisfaction this principle, he developed his second proposition. Since there already existed a "morbid sensitiveness" toward a certain drug, it was, therefore, proper to administer this drug in the smallest dose that it would require to overcome that sensitiveness. He says:

"To the ordinary practitioner it is incredible that a person, when sick, is violently affected by the millionth part of the same drug that he swallowed with impunity when he was well. Will physicians ever learn how infinitely small may be the dose that is sufficient to cure when the system of the patient is raised to a condition of intense and morbid sensitiveness? So powerfully do such small quantities act then upon the over-sensitive frame that the most serious disease is sometimes quenched in a few hours."

Hahnemann's teaching has been summed up under four headings:

First—Use only such drugs whose effects on the *healthy* individual is known.

Second—Give only one drug at a time, and never, under any circumstances, repeat until the effect of the first dose is exhausted.

Third—Invariably select an *homeopathic* remedy; that is, a

drug whose effect on the healthy individual is the same as the symptoms of the disease to be treated.

Fourth—Having selected the drug in accordance with the third proposition, “we must give it in a dose so minute that it shall only act on the part morbidly susceptible of its action, raised to a condition of idiosyncrasy by the disease whose likeness is represented by the *pathogenetic* effects of the drug.” (Russell.)

The school established by Hahnemann received comparatively little approval in Europe. Germany, the country of its birth, gave it very small encouragement. England proved somewhat more hospitable, but in the United States its adherents are found quite numerous. Not all of the founder's tenets are believed in, and the practice has wandered considerably from that laid down by Hahnemann.

After many years of struggle and opposition, Hahnemann moved to Paris, where, married for the second time, he enjoyed several years of repose in his retirement. He had been practically driven out of Leipzig, where a law had been enacted prohibiting the dispensing of medicines by physicians.

He died on the 2d day of July, 1843.

THE National Confederation of State Medical Examining and Licensing Boards will hold its Twentieth Annual Meeting at St. Louis, Mo., on Monday, June 6, 1910, in the Southern Hotel.

The subject to be taken up at this meeting will be a consideration of practical clinical instruction in medical colleges, a report on medical education in the United States by a representative of the Carnegie Foundation, and a report on a proposed materia medica list by a special committee. The contributors of papers to the symposium on clinical instruction are men of the highest standing in the medical profession. The chief object of this symposium is to determine, as far as possible, whether clinical instruction in medical schools can be made sufficiently practical and thorough so as to warrant the medical boards in demanding practical examinations in the principal branches of the medical course.

An earnest and cordial invitation to this meeting is extended to all interested in securing the best results in medical education. ordinary methods of routine investigation.

An earnest and cordial invitation to this meeting is extended to all members of State boards, professors and teachers in medical schools, and all others interested in securing the best results in medical education.

The officers of the Confederation are: President, A. Ravogli, M. D., 5 Garfield Place, Cincinnati, Ohio; Secretary, Murray Galt Motter, M. D., 1841 Summit Place, N. W., Washington, D. C.

GYNECOLOGY IN THE YOUNG.

By A. Samuels, M.D.

Baltimore, Md.

GYNECOLOGICAL conditions often arise in the development and growth of a woman after the beginning of menstruation and prior to marriage. These conditions are often concealed by the patient or passed over by the mother, unless it happens that the mother is unusually broad-minded in her opinions and capable of considering the ultimate result of neglect on the life and health of the developing woman.

I will neither take into consideration gynecological conditions that may result from specific infections as gonorrhea and syphilis, nor the broad subject of sexual hygiene upon which so much has been written, but limit this paper to the consideration of the symptoms of intrapelvic gynecological conditions of sufficient gravity to call for treatment or for operation.

The position of the gynecologist is peculiar in this class of patients. Without an examination he is rarely able to diagnose the case, and for making an examination he is often severely criticised. Therefore, he must be sure that the symptoms warrant an examination or subject himself to censure for an unnecessary exposure, and be more or less blamed for any condition that may arise in after years. In the eyes of the laity an examination of a young unmarried woman is a little short of criminal, and there can be no question of the wisdom of avoiding an examination if possible. However, an examination should not be deferred when symptoms are of sufficient gravity to call for one.

Local Symptoms.—Leucorrhea is one of the most frequent symptoms. It is particularly annoying to the patient, but must not be regarded too seriously. In most instances it is the result of a disturbed uterine circulation. Disturbances of the uterine circulation cause a passive congestion, and the increased amount of blood causes a hyper-secretion from the cervical and endometrial glands. The amount of discharge varies greatly, and does not bear any definite relation to the severity or the importance of the pelvic lesion, as in some patients a slight stimulation may cause a profuse hyper-secretion of the glands, while in others the same amount of stimulation would not affect them very materially. The color of the discharge is without pathological significance; the color in most instances is due to bacteria. Most women have more or less uterine secretion, and it is difficult to determine whether it is a hyper-secretion resulting from a pathological condition of the pelvic organs, or whether it is normal to the individual. Hence, it is impossible to form any judgment as to the importance of the lesion from the character, duration or amount of the discharge.

Menstrual Disturbances.—Irregularities of the menstrual flow, particularly as to the length of time between the periods and the amount, is important. When the interval is shortened to say 12 to 14 days, it can be safely deducted that there is some cause for pelvic congestion. When the interval is lengthened beyond the ordinary 28 to 31 days, and there be no systemic cause for the amenorrhea, an undeveloped uterus or sclerotic ovaries may be suspected.

An excessive flow is due to uterine or pelvic congestion, and is secondary in nature. When the amount is lessened, it may be due to pelvic anemia or uterine anemia caused by faulty development or a faulty performance of the ovulatory cycle.

Pain.—The subject of pain is one that requires a special study, and much depends upon the skill of the gynecologist in correctly interpreting this symptom. We all know that no two patients endure pain alike. Pain from an insignificant, pathological condition may cause weeping in some women, especially in those who are more or less neurotic, while similar pain in another individual may cause little or no discomfort. I do not think one is ever justified in examining a young unmarried woman or operating when pain is the only symptom. Frequently we find scattered painful points; these are most undoubtedly of neurotic origin. With painful points over the ovarian region, the patient not infrequently assumes a bending or leaning forward position when sitting or walking. The same position is frequently assumed with grave pelvic lesions, and to differentiate the one from the other often requires more than the ordinary methods of routine investigation.

Pain may be divided, for convenience of discussion, into pelvic pain and reflex pain. The pelvic pain we may subdivide into aching, dragging or bearing-down pain and colic.

Aching is in general a symptom of pelvic congestion due to any cause whatsoever. It may be associated with the menses, but usually precedes it, and, after the flow is well established, it is usually relieved. The pain is, as a rule, constant in character, lasting several days, increased on exertion, and associated with irritability of the bladder, constipation, headache and neurasthenia.

The dragging or bearing-down pain is more or less constant, but varies in severity and may be due either to displacement or growths. Colic immediately precedes or is associated with the flow, and has its origin either in faulty development of the uterus or in sclerosis of the tunica albuginæ. This symptom varies from a slight crampy pain to a most severe colic, which is only relieved by morphine. It is usually referred to the lower portion of the hypogastric region, but when due to ovarian sclerosis, the pain may be referred to the ovarian region on one or both sides.

Uterine pain may be due either to stenosis, when passage of a small clot follows the pain, or it may be due to the flexion atrophy resulting from anterior or posterior bendings of the uterine body.

When the flow is normal in character and the pain laterally situated, the sclerotic ovary should be suspected.

Irritable Bladder.—The cause of irritability of the bladder of gynecologic origin and not associated with lesions of the bladder are due to pressure of an anteflexion or anteverted fundus, and any retroposition of the uterus with or without prolapse, causing the organ to drag on the bladder wall and interfere with its functions. The cause of this symptom must of necessity be mechanical in origin.

Constipation.—When this condition is not systemic or due to habitual neglect, it is either caused by relaxation of the muscles of the perineum with a tight sphincter ani, or else it is due to the mechanical obstruction of the bowel by a retroversion alone, to flexions or to tumors.

In all these conditions pelvic pain may be associated with pain due to appendiceal colic, catarrhal appendicitis and the milder forms of chronic appendicitis with concretions and adhesions. The differentiation of pain and tenderness due to a cystic or sclerotic right ovary and the chronic appendicitis is often difficult, for the reason that the pain may be very similar in character, come on in attacks and closely resemble ovarian colic.

Backache.—This symptom is of two types, lumbar and sacral. The backache in the lumbar region is usually not associated with the period, and is due to the dragging of a retroverted or prolapsed uterus. The sacral pain is, as a rule, associated with the period, and is caused by uterine or pelvic congestion.

Headache.—The association of headache is hard to explain, except under the general term of reflex. The location of the headache is usually occipital, occurring just prior to or after the period, sometimes showing itself in the form of severe migraine. Before any decision is reached in relation to the cause of the headache, the ocular condition should be investigated. Gynecological attacks are not always concurrent with the period, the attacks of migraine occurring any time during the intermenstrual period. When the intermenstrual attacks persist a gynecological cause is to be suspected after the ocular condition has been eliminated.

Neurasthenia.—Under the general term of neurasthenia are grouped many symptoms so indefinite that it is unwise to pronounce neurasthenia a symptom of any condition. It is perhaps a nervous condition caused by pelvic lesions. Some of these patients are neurasthenic at the time of the period; others between the periods. It is much more difficult to account for the continued neurasthenia than for the intermittent types. The symptoms vary. One of the most frequently observed is melancholic in character; in some cases the melancholia has been very marked, coming on in attacks so severe as to raise the question of true melancholia. In other cases the neurasthenia has shown itself in apathy and lack of interest

during the attacks, the patient remaining uninterested in anything and performing only those functions which are necessary to the preservation of life. On the other hand, we frequently see cases that are irritable, cross, fretful, dissatisfied and unhappy, an individual to whom nothing is right, with outbursts of severe and at times uncontrollable temper. These neurasthenic symptoms are most frequently associated with cystic or sclerotic ovary, prolapse of the ovary, retroflexion or retroversion, or both combined with prolapse.

General Conditions.—The general conditions associated with gynecologic conditions are anemia and gastrointestinal intoxication. Most frequently these conditions are associated with poor general health, although there are many cases in which the gynecological condition does not seem to affect the general health to any perceptible degree, and this is often misleading.

Examination.—For the patient presenting any of the foregoing symptoms that do not yield to medical and hygienic treatment for a rational period of time an examination is warranted. The large percentage of cases presenting symptoms which yield to the proper medical and hygienic treatment it is obviously unnecessary to examine. There is also a percentage of cases which persists in symptoms because proper medical and hygienic treatment cannot be carried out.

Method of Examination.—An examination without an anesthetic is more or less unsatisfactory, because the examination is painful and the patient will not relax her abdominal muscles, therefore it is very important to administer a general anesthetic. An understanding may be had with the patient or her mother to the effect that surgical interference may be done at the time of the examination should one be found necessary. For instance, if a stenosis should be found, the uterus may be dilated and curetted. Malpositions may easily be corrected. In other words, in examining young unmarried women under an anesthetic the gynecologist should be prepared at the time of the examination to perform anything from a simple examination to opening the abdomen. It may be well to add that in the event of a possible major operation that the examination should be made in a well-appointed hospital. For the cure of intrapelvic conditions we may divide the treatment into (a) local and (b) surgical.

(a) Local Treatment.—In the young unmarried woman the local treatment should be avoided whenever possible. Aside from it being unsatisfactory for the cure of the local condition, it causes a lot of embarrassment to be exposed two or three times weekly, and every condition that is amenable to surgical treatment should be done at the time of the examination. Small erosions and general pelvic congestions that cannot be treated by surgical means require the application of astringents and glycerine tampons. In a few

selected cases a properly-fitted pessary may be advised, but under ordinary circumstances the pessary should not be used for retroversion. The use of the stem pessary for stenosis and the milder degrees of flexion is well worth trying in selected cases.

(b) Surgical Treatment.—For the relief of stenosis a full dilatation of the cervix with curettage is a procedure that brings great relief. In these modern days of aseptic surgery it is almost needless to say that all surgical operations should be done under strict aseptic precautions. In patients with a high degree of stenosis post-operative treatment is usually necessary. What I mean is this: A forcible dilatation will not, as a rule, correct the stenosis, but two or three dilatations are sometimes necessary, which may be done in as a rule, painful, and if painful, especially in highly nervous and easily excited persons, the application of 10 per cent. cocaine in the cervical canal will aid materially to obtain a sufficient dilatation without much discomfort. It is usually a good practice to pack a cervix of this kind after the first dilatation. The pack should be removed at the end of 48 hours, and if possible a second one should be inserted. I am fully aware that dilatation and curettage is the most abused operation in the field of gynecology, but when indicated it is one of the most important. The danger of rupturing the uterus or the perforation of the uterine wall with the curette is small in the hands of experienced surgeons.

Anteflexions, when of sufficient degree to cause symptoms with stenosis of the cervix, are best treated by the operation advised by Dudley.

Dudley's operation has for its object the utilization of dilatation and of posterior division of the cervix in such a way as not only to enlarge the caliber of the uterine canal, but also to straighten the uterus, and thereby overcome the circulatory obstruction. The operation is performed as follows:

Everything connected with the operation has been rendered surgically clean. The patient being under ether, the uterus is exposed by Sim's speculum. The uterine canal is dilated by means of a Palmer, Ellinger or Goodall dilator sufficiently to permit the introduction of a small sharp curette. Curettage is performed. The curettage may give only negative results, and may be therefore simply exploratory, or it may give evidence of pronounced endometritis. If the latter, it is imperative as a preliminary aseptic step not only to the plastic part of the operation, but also as a curative measure.

The cervix is divided with scissors in the medium line past the uterovaginal attachment nearly to the uteroperitoneal fold into the pouch of Douglas.

The cut surfaces thus incised are then held widely apart by two tenacula in the hands of an assistant; the incision is somewhat deepened by means of a scalpal, especially in the uterine wall next

to the cervical canal, and a small angle is cut out on either side. The cut surface on each side is now folded on itself by a single silk-worm or chronic catgut suture. This suture is tied and fortified by interrupted sutures on either side. By means of these sutures the os external is carried directly to the angle of the incision. The cervix now points backward in its normal direction toward the hollow of the sacrum, instead of forward toward the vaginal outlet.

In some cases of extreme ante flexion there is a disproportionately long anterior lip, which is the result of a relatively greater pressure on the vaginal lip by the posterior vaginal wall. This elongated lip should be caught with the tenaculum and partially removed by the scissors. The incised surface is then closed upon itself with sutures. The incision should extend to, but not into, the os externum. This part of the operation is not required unless the anterior lip decidedly protrudes, therefore usually is omitted.

Examination upon completion of the operation has shown invariably the uterus to have been straightened or the flexion to have been reduced to a degree quite within physiological limits. The results have been substantially the same, whether the point of flexion was at the os internum or below it. The two posterior lines of sutures have the effect of transplanting the os externum to either angle of the posterior incision. The anterior sutures, if used, have the effect of carrying the cervix back by a distance equal to one-half the length of the anterior cut surface, which is doubled upon itself. By this means a permanent change quite equal to overcoming the flexure is effected in the direction of the cervix. This operation or any uterine treatment, surgical or non-surgical, will not help a small undeveloped uterus. The so-called congenital ante flexion is only one factor in the general failure of development, and failure that pertains not to the uterus and their reproductive organs alone, but to the general system, the amenorrhea or very scanty menstruation and the sterility usually associated with this condition being only the local expression of a faulty general development, and are not, as aforesaid, reached by any uterine treatment, surgical or non-surgical.

Retroversion and retroflexion, when of sufficient degree to cause symptoms, can only be relieved by operation, and in the event that these women have not passed the child-bearing period, only those operations for the relief of retroflexion that do not fix the uterus or cause it to adhere to surrounding structures are to be performed.

The operation for relief of retroflexion that is adaptable is the one that has been devised by Gilliam. The advantage of an abdominal section for the relief of retroflexion is that the surgeon may inspect the ovaries and tubes, and if they are found diseased, they may be removed. Also the appendix may be inspected and it removed if conditions warrant it. Small cysts frequently found in the ovary are merely punctured. Of course, adhesions should be separated. If the ovary is prolapsed, the utero-ovarian ligament may be shortened. Small fibroids in the uterus should always be removed.

MARYLAND MEDICAL JOURNAL

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BALTIMORE, MAY, 1910

MRS. ISABEL HAMPTON ROBB.

IN the death of Mrs. Isabel Hampton Robb physicians, nurses and the sick have lost one of those helpers and friends that are too rarely met with. What she accomplished for these three classes directly, and therefore indirectly for the general public, in her active but too short a life cannot be dealt with here; nor would it be possible to estimate the benefits which have already resulted and which will still continue to result from her influence and efforts. Belonging to a scientific age, Mrs. Robb very early imbibed the scientific spirit and readily saw that in her life-work of nursing well-meant efforts and enthusiasm without intelligent direction and training would certainly prove for the most part futile when not positively harmful. But while always enthusiastic for the intellectual part of her work, she never lost sight of the human side. Her scientific zeal was always tempered with a broad humanity and a large amount of common sense. Thus, while always stimulating, her influence was always wholesome. She taught and made those around her feel that all the organization of hospitals, all the training of nurses had only one main end and object in view—the relief of the sick. And with Mrs. Robb the sick represented not so many cases of more or less interesting diseases, but the individual sick man, woman and child, for whose relief the work of the well-trained nurse was needed no less than that of the physician. Thus it was that in her eyes only the woman who started first with a true love for suffering humanity, and then with painstaking labor sought by a well-rounded training to render herself capable of accomplishing the greatest amount of good, was really worthy to call herself a trained nurse. In her eyes the commercial nurse had not only mistaken her work in life, but would also bring unjust criticism upon a noble profession.

Of her capacity for organization only one instance need be mentioned here. She came to Baltimore in the fall of 1889, and found

everything in chaos; by the middle of 1890 she had organized as efficient a training school as could be found anywhere and had laid the foundations for its further increase in usefulness.

To those who were personally associated with Mrs. Robb in her work in the early days of the Johns Hopkins Hospital—physicians as well as nurses—it seems as though one of the most beloved members of the faculty had been taken from our midst. Her frank and generous nature called for affection from all around her, and among the many privileges with which those days were associated each one feels that the friendship of Mrs. Robb will always remain one of the most lasting and highly prized.

THE IMPORTANCE OF PROPERLY-FITTING CORSETS.

JOEL E. GOLDTHWAITE, writing in the *Physician and Surgeon*, emphasizes the effects of posture on the position and function of the body viscera, and maintains that anything that can be done to make the correct position possible should be the effort of every physician. It should be our endeavor to eliminate so far as possible all elements that tend to favor faulty postures, or any elements which can in any way result either in displacements of or interference with the function of the viscera. In his opinion, corsets play an important part in the production of many of the ills of womankind. This being the case, a properly-fitting corset is practically necessary, so that harmful effects do not occur. In the writer's opinion, a proper corset should be so made that the normal erect poise of the body is in no way interfered with, and so that whatever support may be given by the corset will tend to throw the body into the position most favorable for function rather than in position of strain. A corset should not change the normal curves of the body, but should preserve them. It should be snugly applied at the lower part. The narrowing in of the corset at the lower part of the ribs, which necessarily results in the squeezing of the ribs downward, as well as inward, should be avoided, since not only does this interfere with the respiratory function, but it necessarily results in the crowding of the stomach, liver and the bowel out of the normal position and into a lower plane. It should be fairly low at the back, so that no pressure comes over the scapulæ. It should be fairly high in front, but at the same time should be so loosely fitted that it in no wise interferes with respiration. A corset fitted along such general lines can do practically no harm.

Medical Items.

THE annual meeting of the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics will be held in Baltimore May 7.

AN examination for appointment as first lieutenants in the Army Medical Corps will be held July 18 at various army posts throughout the country.

DAVID STREETT, M.D., dean and professor of medicine of the Baltimore Medical College, was operated on at the Maryland General Hospital April 26 for appendicitis by Ridgeley B. Warfield, M.D., professor of surgery at the same school.

ISAAC THOMAS COSTEN, M.D., Pennsylvania Medical College, '57, has been elected Mayor of Pocomoke City for the third term.

A THREE-STORY addition will be made to the Robert Garrett Hospital for Children. It will cost about \$8000.

THE Montgomery County Medical Society elected the following officers for the ensuing year: President, Dr. William L. Lewis of Kensington; vice-president, Dr. J. Dudley Morgan of Chevy Chase; secretary and treasurer, Dr. John L. Lewis of Bethesda.

MEMORIAL services were held at the Johns Hopkins Nurses' Home for Mrs. Isabel Hampton Robb, the first superintendent of the Training School for Nurses, who was killed in a street-car accident in Cleveland.

A REUNION of the alumni of the Johns Hopkins Medical School will be held May 6 and 7, the object being to effect a permanent organization.

DR. GUY L. HUNNER has purchased a tract of land containing 181 acres on the Magothy river, near Robinson Station, Anne Arundel county. The place will be laid out for development purposes.

SAMUEL A. NICHOLS, M.D., of Dayton, Md., is an active candidate for appointment to the State Roads Commission.

THE engagement is announced of Rodger Walter Williams, M.D., of Buena Vista, Va., to Miss Mabel Stuart White of Dickerson, Md.

THE Federated Charities is appealing for \$8500 for sick diet of milk, eggs and ice for the poor of Baltimore this summer. The money is used to provide these necessities to the sick for whom physicians have prescribed such a diet, and who are found upon investigation to

be too poor to provide such things for themselves.

THE Maryland Society of Social Hygiene reports substantial progress during the past year.

THE Board of Aldermen of Staunton, Va., has adopted a resolution accepting the proposition of the physicians of the city to assist in the enforcement of sanitary regulations in consideration of exemption from license tax.

THE University College of Medicine of Richmond, which was totally destroyed by fire some months ago, is to be rebuilt. The college has maintained its classes during this year through the courtesy of other institutions, which have placed their classrooms and apparatus at the disposal of the college.

MARRIAGES.

JAMES STEPHENSON HOPKINS, M.D., to Miss Elizabeth Finney Hopkins, both of Belair, Md., April 19, 1910.

ROBERT STEVENS PAGE, M.D., University of Maryland, '98, to Miss Grace Rogers Street, both of Belair, Md., April 6, 1910.

DAVID FRANKLIN, M.D., University of Maryland, '08, to Miss Mary Bearman, both of Baltimore, April 3, 1910.

WILLIAM PRESTON MILLER, M.D., University of Pennsylvania, '94, of Hagerstown, Md., to Miss Annie Louise McWilliams of Odell, Ill., at Pasadena, Cal., April 26, 1910.

JOSEPH LONGWORTH NICHOLS, M.D., Johns Hopkins Medical School, '97, of Saranac Lake, N. Y., to Miss May Morgan of Baltimore, at Saranac Lake, N. Y., April 5, 1910.

ARCHIBALD CARY RANDOLPH, M.D., of Charlottesville, Va., to Miss Eva Randolph Dulany of Grafton Hall, Fauquier county, Va., April 26, 1910.

EDGAR LYON WOODS, M.D., U. S. N., University of Virginia, '04, to Miss Grace Douglass Anderson of Alexandria, Va., April 14, 1910.

DEATHS.

WILLIAM D. JONES, M.D., Maryland Medical College, '05, at his home in Baltimore, April 18.

THOMAS M. LEWIS, M.D., Jefferson Medical College, '55, at his home at White Post, Va., April 14, of general debility, aged 97 years.

THOMAS BLAND CAMDEN, M.D., Jefferson Medical College, '54, at his home in Parkersburg, W. Va., April 17, aged 80 years.

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Book Reviews.

THE PROPAGANDA FOR REFORM IN PROPRIETARY MEDICINES. Sixth edition. Reprinted from the *Journal of the American Medical Association*. Cloth, 35 cents; paper, 10 cents. 1910.

This book contains in an orderly form the literature which has appeared in the *Journal of the American Medical Association* against the patent-medicine concerns and their products. The object of the appearance of this book in popular and condensed form is to place in the hands of physicians a ready reference medium, so that the ingredients of any given preparation may be ascertained at a glance.

A CONTRIBUTION TO THE COMPARATIVE ANATOMY OF THE PROSTATE GLAND. Being a thesis for the Doctorate of Philosophy in Biology at the Illinois Wesleyan University, Bloomington, Ill., June 17, 1909. By C. W. G. Rohrer, B.Sc., M.D., M.A., Associate Professor of Pathology and Assistant in Genito-Urinary Diseases, College of Physicians and Surgeons, Baltimore; Medical Assistant to the State Board of Health, Maryland. With biographical sketch and portrait. Baltimore: W. J. C. Dulany Company. Cloth bound. 1909.

The work in this book covers a period of 12 years, and is designed to trace the relationship of the prostate in the human and the several animal groups. It is a volume of 119 well-written pages, in which the author traces the histological structure of the prostate from a simple unicellular gland to the complex gland of man. An added attraction to the book is a brief biographical sketch of the author by his wife.

MEDICAL DIAGNOSIS. A MANUAL FOR STUDENTS AND PRACTITIONERS. By Charles Lyman Greene, M.D., St. Paul, Professor of Medicine and Chief of the Department in the College of Medicine, University of Minnesota; Attending Physician St. Luke's Hospital and the City and County Hospital; Chief of the Medical Clinic in the University Hospital; Member of the Association of American Physicians, the American Therapeutic Association and the American Medical Association. Third Edition. Revised. With seven colored plates and 248 illustrations. Philadelphia: P. Blakiston's Son & Co. 1910. Flexible leather. \$3.50 net.

Incorporated in this volume are the many advances made during the past few years in medicine. The book has been thoroughly revised, remodeled, and in some cases entirely rewritten. It consists of some 600 pages, put in such form and English as to make it a reliable student's and general practitioner's book. Its chief attraction is its practicalness, the author including within the text that which his experience has proven useful. One notes also with a feeling of relief the absence of superfluous statistical garnishings and the banishment of Professor this' and that's favorite unessential and unproven theories concerning the various afflictions to which the flesh is heir. Added to its many charms is its conciseness, modernness and size, which is such as to easily slip into one's coat pocket.

The first chapter is devoted entirely to the outward signs of disease, visible symptoms, perceptible to the naked inspection. Dr.

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Greene has produced an ideal textbook for students and has approached his subject in a logical way, the sequence of the text being admirable and calculated not to confuse and embarrass the reader.

THE ELEMENTS OF THE SCIENCE OF NUTRITION. By Graham Lusk, Sc.D., Ph.D., F.R.S. (Edin.), Professor of Physiology at the Cornell University Medical College, New York city. Second edition; revised and enlarged. Philadelphia and London: W. B. Saunders Company. Baltimore: Medical and Standard Book Co. Cloth, \$3 net. 1909.

This book unbears the scientific facts upon which rest our knowledge of nutrition in health and disease, and presents the facts in an orderly, systematic and readable form; calls attention to the important ally we have in combating disease by proper dietics, and gives to the clinician a reliable dietetic guide. Amongst the more important chapters may be mentioned The Influence of Protein Food; The Specific Dynamic Action of Fat and Carbohydrate; A Normal Diet; The Food Requirements During the Period of Growth; Metabolism in Diabetes, etc.; Theory of Metabolism. Diet in health and disease in the growing and in the pregnant are clearly and intelligently discussed. It is a book directed to an aspect of medicine seldom considered by writers—a book designed to leave its impress on its readers. It is an example of a book scientific in character, pointing out how science can be used for the purpose of combating disease. It is a physiological treatise on nutrition, and the application of the knowledge thus gained to practical purposes written by an expert. It is one of the few books worth while reading.

THE CONQUEST OF DISEASE THROUGH ANIMAL EXPERIMENTATION. By James Peter Warbasse, M.D., Surgeon to the German Hospital, Brooklyn, N. Y.; Member of the American Medical Association, American Association for the Advancement of Science, etc.; Author of "Medical Sociology." Cloth, \$1. New York: A. Appleton & Co. 1910.

This is an excellent little book, written for the purpose of enlightening the public and the medical profession on animal experimentation. It is a reply to the anti-vivisection crusade. As always, there is at present a hue and cry by those who do not understand against animal experimentation. Their ideas as regards the actual facts are grossly inaccurate; sympathy and kind-heartedness is given free play; the benefits derived are utterly lost sight of. These fanatics completely lose sight of the fact that without humane animal experimentation science has and will be incalculably injured. As the author rightly says: "One of the great mistakes of our time is the general promulgation of the idea that most everything is known. It prompts students to go to books and to consult authorities, when instead they would do more wisely to go to nature for the facts." And still again: "There should be no misconception of the meaning of animal experimentation. Let it be remembered that it does not mean animal cruelty. The experiments in which painful operations are without anesthesia are comparatively few. These are experiments upon the nervous system, in which anesthesia would nullify the results, just as operations have to be done sometimes on man without anesthesia." The whole book is an interesting exposi-

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tion of the viewpoint of the progressive animal experimenter. The truth of the procedures employed are tersely told in plain everyday English, without technical terms. The world is informed as to the benefits accruing to it from animal experimentation. Indeed, our knowledge of surgery, medicine and hygiene would have been lamentably crippled without the help of our animal friends. A careful perusal of the book will no doubt clear up many misconceived ideas about animal experimentation.

INTERNATIONAL CLINICS. A quarterly of illustrated clinical lectures and especially prepared original articles by leading members of the medical profession throughout the world. Volume I, twentieth series. Philadelphia: J. B. Lippincott Company. 1910.

The volume before us is, perhaps, the most interesting of all that have yet been issued. The first three articles deal with the newer methods of diagnostic following-up of the course of syphilis, especially by the serum methods. These methods render it possible to tell when sufficient courses of mercurial and other remedies have been attained, and when threatened relapses call for renewal of treatment. Moreover, they furnish differential diagnosis between the mental disorders which are due to syphilis of the brain and those which are due to other processes.

The next three articles form a symposium on pellagra, a disease which has now been detected in the northern regions of the United States, and demands attention from every practitioner in our country. Very valuable illustrations, aiding diagnosis, are found in these articles.

The article by Gideon Wells on Purin Metabolism is a valuable contribution to the very obscure problem of the nature and causation of that ancient and honorable affliction, gout.

There are some beautiful X-rays of fistulas and branched abscesses injected with bismuth paste, by Emil Beck of Chicago. He states that by taking two X-rays from separate standpoints and looking at them with a stereoscope he has gotten views of injected tracts vastly clearer than those obtained by the single method. He dwells, too, at some length on the remarkable results which he has obtained in the cure of sinuses and cold abscesses by these injections.

Still another paper of interest is an article offered by Kimura, on the relation of excess of length in the portio vaginalis to sterility. He enters into a minute description of the normal dimensions of this organ and its elongation in patients before and after parturition, and attempts to show that elongation is directly proportional to delay in conception, while amputation promotes conception very remarkably.

THE SEXUAL LIFE OF WOMAN, IN ITS PHYSIOLOGICAL, PATHOLOGICAL AND HYGIENIC ASPECTS. By E. Heinrich Kisch, M.D., Professor in University of Prague. Only authorized translation into the English language. By M. E. Paul, M.D. With 97 illustrations. New York: Erdman Company, 1123 Broadway. Price \$5.

After an introduction in which the sexual life of the woman as a whole is carefully discussed, the author proceeds to consider the three periods into which the life of the mature woman is divided—

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the menarche, the menacme and the menopause. A very thorough discussion is given of each of these periods, full of useful points for the physician in general practice.

The work is much more scientific than those which have heretofore come to our attention on this subject, and at the same time less intricate in its phraseology. The author's attitude is very conservative. On all disputed points a number of quotations are inserted from reliable observers.

We would suggest that the translator should obtain permission to issue an abridged American edition at a lower price, condensing the many quotations and discussions (as, for instance, the 42 pages given to determination of sex); omitting many repulsive details of sexual cases, especially concerning perversions, and placing within the reach of every practitioner a treatise which would claim recognition rather for its simple presentation of important scientific facts than for wordy quotations and descriptions of freak phenomena, which are more fully presented in the larger works to be found in medical libraries.

Many of the fine illustrations might be omitted in such an abridged handbook. It is not really necessary, for instance, to give 26 separate illustrations of varieties of hymen. The translator's and printer's work are excellent.

Society Reports.

THE PATHOLOGY OF CONGENITAL SYPHILITIC AFFECTIONS OF THE BONE.

THE acquired lesions of bone in syphilis differ from the congenital lesions. The congenital lesions are seen oftenest in the ends of the long bones. They are also seen in the short bones formed from cartilage and also in those formed from membranes. The epiphyses of the long bones oftenest show the lesions. This discussion is limited to the commonest lesions in the long bones seen at birth or in a child dead of congenital syphilis. There may also be changes in the adjacent tissues as ligaments and muscles (causing the pseudo-paralysis of congenital syphilis). If the child lives, it may overcome the bone lesions and have no deformity.

The perichondrium is closely applied to the bone, especially at the limit of ossification. The process of ossification is complex, and this adds to the complexity of syphilitic trouble. As we near the epiphysis we have a rearrangement of the cartilage cells into the proliferative zone. The inroads of blood vessels aid the change of cartilage to bone. Then we have a deposit of calcareous salts around the cartilage cells. This makes up a calcified cartilage. Then blood vessels grow up into this area and set free the cartilage cells, leaving the calcifying matrix. Osteoblasts then come in, giving rise to connective tissue where cartilage was. This gives rise to osteoid tissue, a sort of uncalcified bone, later to be calcified with bone formation as the result. We have then, first, a bone layer; second, an osteoid layer; third, calcified cartilage, and, fourth, the columns of cells. Thus we have a definite line of ossification. The perichondrous fibrous tissue is not very vascular. The syphilitic poison changes the perichondrium and makes it more vascular and more bulky, sending blood vessels into the carti-

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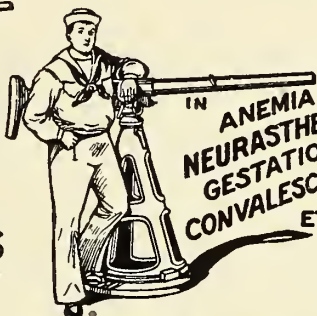
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MAN'S BELT—FRONT VIEW

lage. The adjacent tissue becomes thick and vascular, though rarified and relaxed. The perichondrium is also thick and vascular. The paralysis is due to the ligamentary relaxation. We may have islands of osteoid tissue left, then a non-cellular area, which may become calcified. This is probably due to a necrosis probably caused by the poison of the spirocheta.

The most marked changes are in the epiphyseal line. There is no great callous formation. The essential thing is that the line of calcification is broader, being much increased. The formation of osteoid tissue is in abeyance, but a zone of granulation tissue, rich in blood vessels, is formed. The blood vascular supply in this region greatly increases. When syphilitic granulation tissue forms there is less engorgement. The granulation tissue is patchy, so its development is not so much interfered with. Consequently we have a wide, irregular line of calcification. The line is yellow, with spots and lines of red. The line of granulation tissue may soften and break down, though not forming a typical gumma. We may have the complete dislocation of the epiphysis or a complete transverse fracture of the cartilage of the epiphysis.

The marrow spaces of bone in the shaft are ordinarily full of cells. In syphilis these spaces are filled with connective tissue. Syphilitic bone does not show many osteoblasts, though we may have both rarification and sclerosis in spots, perhaps, with no great deformity. In rhachitis there is more active production of osteoid tissue. In syphilitic osteochondritis it is quite different. The changes may be slight or very extensive and destructive. If the child is capable of living, these changes probably wear away in time and the development of bone goes on.

W. G. MACCALLUM, M.D.,

Section on Clinical Medicine and Surgery.

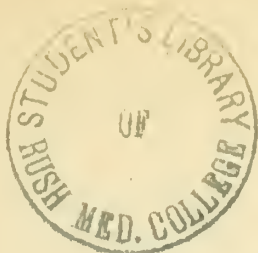
Correspondence.

EARLY in the history of the Denver Chemical Manufacturing Co. our sole product, Antiphlogistine, was nicknamed Denver Mud, and for many years has been known and sold under that name.

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In view of this, we brought suit against the Colorado Chemical Co. of Chanute, Kans., which has recently been decided. A great amount of testimony was taken in St. Louis, Kansas City, New York and other parts of the country, defendant's counsel attending and cross-examining complainant's witnesses. After contesting the case to its conclusion, no reason was presented by defendant on final hearing why a decree should not be entered in this company's favor, and, on the testimony, a decree was granted accordingly.

THE DENVER CHEMICAL MANUFACTURING CO.,
New York.



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PROFESSIONAL SIGNIFICANCE OF THE MIDWIFE AND OPTOMETRY BILLS PASSED BY THE RECENT LEGISLATURE OF MARYLAND.*

By Hiram Woods, M.D.,
Baltimore, Md.

TWO BILLS were passed by the Legislature, just adjourned, which have important bearing on prevention of blindness and preservation of eye health. One, the midwife act, received executive approval. The other, the "optometry" bill, did not. Enactment into a law of the first puts upon the profession certain duties. The veto of the second saves it from dangerous encroachment on the medical practice law, while the means used to secure its passage are interesting and instructive. Having proved to the Legislature and Governor midwife ignorance, we are now confronted with the duty of providing means for her training. In this training must be included instruction in the prevention of ophthalmia neonatorum. Since 1894 there has been a law requiring midwives and nurses in charge of confinement cases to report at once any mattering or inflammation about the infant's eyes occurring within two weeks after birth. The report could be made to the health officer or to any legally qualified physician. The midwife was also forbidden to use any treatment on her own initiative. The object of the law was to secure prompt and proper treatment. There have been five or six convictions in Baltimore under the law, and could have been more had physicians furnished reports of cases to the health office. I do not know of any prosecutions outside of Baltimore. One excellent result of the law has been to make midwives put the baby in competent hands before the cornea has sloughed. We rarely see lost eyes now in hospital practice. Yet the percentage of blind children, with eyes lost from this disease, is greater today in our School for the Blind than was the case in 1892. Whence do these children come? I am informed that geographically about two-thirds are from Baltimore, and one-third from the counties. No part of the

*Read before the Medical and Chirurgical Faculty of Maryland at its one hundred and twelfth annual meeting, April 26, 1910.

State is free from whatever professional responsibility attends this unnecessary loss of eyes. A more significant fact is that 77 per cent. of these blind children were born under midwife care. I am indebted for these figures to my friend, Dr. J. J. Carroll. While part of the increase of pupils may be due to increased appreciation of our excellent school, a greater willingness to send children, or to more activity of the school authorities and other friends of the blind in hunting up children, the fact remains that an appalling loss of sight persists from a disease both preventable and curable. Crede's prophylaxis, modified to the extent of substituting a 1 for a 2 per cent. solution of nitrate of silver is in general use in maternities, and the disease is all but abolished in these institutions. The conclusion seems irresistible that midwives are responsible for most cases of this form of blindness, and physicians for the remainder; "responsible," because the disease is preventable and curable. Then why so much of it? As regards midwives, the answer is simple. They do not know the dangers, and have confidence in their own remedies. I feel that I can speak of this matter from something besides mere theoretical belief. When it was proposed in the Faculty's House of Delegates in December last to put into the midwife bill a clause making Crede's method compulsory on midwives, I opposed it, because observation had convinced me that many of these women were too ignorant, dirty and clumsy to use the method properly; that post-partum infection of the baby's eyes was often conveyed by the midwives; that it was totally inconsistent for us to prove midwife ignorance and filth, on the one hand, as a reason for legislative enactment, and, on the other, to put into the bill a mandate for her to use a method demanding at least cleanliness; that it was our duty to teach the woman how to do something before requiring her by law to do it. Our county members opposed this section, and even if it had been favored by city men, it could not have gained a place in the original bill. However, the bill gives Baltimore the right to pass such special legislation as the Mayor and City Council see fit. The new midwife law opens the way to acquiring a better class of women. The president's suggestions for maternities to take up the educational task is the easiest way if the schools can do it. There remains the midwife now licensed and exempt from the law. Little by little she will be replaced by more competent rivals, but it is neither right nor logical to wait for this. Somebody or some organization must take up instruction in prophylaxis of the present midwives. A midwifery committee of the Faculty and the Society for Prevention of Blindness should, in my judgment, work together with the necessary aid of the Health Department. The latter should review its registration list and do what it can to compel birth registration. Unregistered midwives should be prosecuted whenever found. I do not know what may come out of future deliberations, but I personally believe that the Society for Prevention of Blindness will have to take the list of registered midwives, divide them into groups and get volunteers from our own profession to teach them how to use Crede's method.

Then we can ask the City Council to make its use compulsory. It will also be incumbent upon the Health Department to follow the example of the New York board and furnish free the prophylactic solution.

In the counties compulsory prophylaxis will be impossible. Indeed, the law seems to inflict upon our county brethren responsibilities which will increase their unremunerative work. Yet the fact that one-third of the ophthalmia pupils in our school come from the counties should demand serious attention. I have not the figures, but I believe most of these children come from the cities and towns through the State rather than from rural districts. Be this as it may, the new law is going to force midwives to call in medical help more frequently. The ease with which ophthalmia neonatorum is prevented makes it no great task for the county physician to acquaint himself with the importance of prophylaxis, with its simple technique, and to give such instructions to the midwives in his district as opportunity offers. The reward must be in saving of sight for the baby.

Regarding the percentage of pupils born under medical care, the conclusion is unavoidable that a curable disease was either not recognized, its gravity unappreciated, or was improperly treated. If a man loses a case of ophthalmia neonatorum it is "up to" him to explain why. Patience, cleanliness and the use of the proper remedy will cure 98 out of 100. The other 2 per cent. are made up of infections too virulent to be overcome, or tissues too frail to resist any infection. Such children usually die. In my own experience the only two eyes I have seen destroyed, when the cornea was clear at first, were sacrificed to parental stupidity and ignorance. In one case my assistant, in the other myself, were not allowed to take the child into the hospital, and at home it was simply impossible to secure cleanliness or attention. But these are not the usual conditions under which eyes are lost. No matter how ignorant parents may be, they respond to a call for sacrifice when sight is at stake. Every oculist has had cases sent or brought him with a long list of remedies used—most everything but the one thing known to cure. The medical men in charge of such cases are not, as a rule, members of medical societies. So the problem is the old one of teaching men who don't want to learn, and won't put themselves where they can learn.

Just a word regarding a phase of prophylaxis in which every practitioner claims, and properly claims, the right of individual judgment; that is, in private work. An obstetrician in Baltimore told me the other day that he had adopted Crede's method as a routine in private practice, because in two or three unsuspected cases the baby's eyes had become infected. Experience in maternities here has proven that whenever the least discretionary power was left to residents, ophthalmia increased. Gonorrheal infection in the mother is so easily overlooked that the only safe procedure is to use the method regularly. Such experiences show that if obstetricians always used some form of approved prophylaxis, and

if post-partum infection were guarded against, the disease could be eradicated. Whether or not the profession will ever come to this is doubtful; but while we are considering the duties now imposed on us to save children's eyes from midwife abuse, it is not inappropriate to think about what we can do in our sphere of practice.

The second bill, which affects the preservation and welfare of eyes, was the so-called "optometry" bill. There is abundant evidence that many members of our profession did not know what optometry meant. It is a comparatively new word. Etymologically I believe it ought to mean measurement of optics. Applied to the eye, its significance should be measurement of the eye as an optical machine, and an optometrist would be one who was, or claimed to be, skilled in making such measurements. Practically the term optometry means the work of the examining optician, and the optometrist is one in this business. Thus, a bill to promote knowledge and skill in the merchants to whom many people apply for optical aid had an attractive sound. It is to be noted that on the face of the thing it looked like an advance in protecting the public. A sharp line seemed drawn between merely measuring the human eye as an optical machine and studying it as a component part of the nervous system. Yet certain things led oculists to study this bill closely. We knew, in the first place, that many serious eye troubles often manifest themselves through discomfort in work: apparent changes in refraction, and that correction of the apparent error does not reach the real trouble. It was a matter of experience and observation that glaucoma, insidious forms of iritis, retinitis, etc., were often found in persons who thought that all they needed was a change in glasses. Again, we knew that these same patients often brought us pupillary disorders, various field alterations, or a seeming insignificant muscular trouble which were but symptomatic of serious lesion outside the eye. We believed, too, that the very men who wanted this bill passed had often overlooked these things, had caused unnecessary suffering, and, through their lack of diagnostic skill had wasted with useless change of spectacles the only time when treatment could avail. So we studied it, and here is what we found:

Omitting administrative provisions, we saw that the bill required the Governor to appoint a board of five examiners from persons engaged in the practice of optometry, and "preferably, but not necessarily, persons endorsed by the Maryland State Optical Society." This society, be it remembered, consists of men in the optical business, and the wording of the bill made it practically impossible for the Governor to appoint anybody these gentlemen did not want. Again, there was not the least indication regarding the scope of the examinations. In our medical law the subjects are definitely stated. Not so here. The board was given absolute freedom in selecting the subjects upon which future business rivals were to pass examinations. Another section gave the optometrist right to use any optical means known to science for determining and prescribing for optical defects of the human eye. He was not to use drugs. He

was clothed with legislative authority to differentiate between normal and abnormal eyes, with the view of referring abnormal cases to a physician. This section clearly admitted the distinction between optical defects, per se, and the same defects as symptomatic. Optical treatment of ocular defects in children, without knowledge of the basic refraction under cycloplegia, is fraught with danger. Diagnosis of serious and significant eye lesions is frequently impossible without mydriasis. But use of agents to produce these conditions would have been an encroachment on the medical practice act too gross to stand; so rather than omit the right of diagnosis, conditions were attached making its correctness difficult or impossible. Physicians are legally responsible for their errors in diagnosis and treatment; yet here was legislative authority for non-medical men to make differential diagnoses and install treatment, under inadequate conditions, without the least attachment of responsibility. The only other section to which I call attention exempted from the provision of the bill all dealers unless they practiced or professed to practice optometry. Thus, the department store, street vendor, county peripatetic, etc., were given full swing, unless a State's Attorney could prove that in selling glasses they practiced or professed to practice optometry. Such were the provisions of the bill, and it was on such grounds that we opposed it.

The manner of introduction and plan of campaign present certain interesting points. Dr. Ashby was convinced that the medical profession, at least that part of it concerned with eye troubles, did not oppose the bill, and so he introduced it in the House. When he found, as he soon did, that he was in error, he changed front with an alacrity and activity that showed his sincerity in protecting our profession from back-door attacks. After the hearing before the Hygiene Committee of the House, oculists were attacked in the newspapers over the signature of the Maryland State Optical Society and accused of selfish motives. One interview with an optician stated that a large proportion of eye troubles—I do not recall the exact figures—were easily diagnosed by a layman, and that the rest were as easily seen by an optometrist. The only rational explanation I can think of is that the interviewer and ourselves are talking about different things. At the hearing a medical graduate, who has passed the State Board, is a licensed physician, and who has cast his lot with the optometrists, stated that his reason for studying medicine was to obtain legal right to use cycloplegics. He also said he had since concluded they are unnecessary. From time to time we heard the hope expressed that oculists would not push the matter so far as to compel the opticians to open their books and show medical blunders. Then came the attempt to arraign the general medical profession against oculists. It is an old scheme, and has been used in other States with more or less success. The Maryland State Optical Society sent out cards, signed by their M. D. secretary, asking physicians if they approved "a law that will require opticians or optometrists who prescribe lenses to pass an examination before a State Board of Optometry." That many physicians did

not know just what they were asked to endorse was evidenced by their sending these cards to their oculist friends with request for information. Others signed them and then wrote to these same friends, seeking a way out of their hasty action. However, the statement was made, so I was told, that about 90 per cent. of the general profession endorsed the bill by these cards. Some of the reasons have since been given us. Some men thought that the examining opticians were being put under the State Board of Medical Examiners, and naturally inferred that beneath the sheltering arms of the board's worthy president was a good place for the optician as a permanent place of residence. One prominent physician of the State thus wrote to Dr. Reik: "I received a double postal card with a reply department attached, favoring an examination for opticians, etc., and signed by an M. D. I was very busy at the time, and thinking it was from the Faculty, like the chump that I was, I signed the damned thing and sent it into the 'optometry' camp."

I have reviewed these matters to show how the examining optician tries to use the general profession in his endeavor to get a back-door entrance to the practice of ophthalmology; for that is his real object. Mr. Robert Paine Hudson has a paper in the *Optical Journal* for July 15, 1909, read before the Tennessee Optical Society. His subject is "The Optometrist of the Future." Among other things, the writer says: "The greater part of the big books of ophthalmology is eye diseases and their reflexes. Here is another field to exploit, and we propose to invade it, and not only invade it, but capture it. Nor do we intend to stop here. There is still another field to invade, and it shall be ours, namely, ophthalmic surgery. And how are we to attain these? By higher education and legislation. The legislation will be forthcoming when we are qualified. * * * Already the best optical schools in this country have raised their course to two years. When another year is added may not the course include eye diseases and ophthalmic surgery? But what about the course of general medicine? This three years' course will include all the medicine of the eye and its kindred diseases. The optician will not then be called optician, for that pertains to optics only. At present the word optometrist is in the lead, yet I cannot believe it will be the name of the graduate of the new school. He may be called ophthalmist, optologist or oculist. The word ophthalmologist is too long ever to become popular with the people. * * * The question that arises is, if the optometrist now had the whole chair on the eye and its diseases, would it be any better for him or his patrons? Beyond a doubt it would be far better for both. Why do people go to an oculist and in many instances pay him \$10 to \$15 for a prescription, then go to an optician for glasses, when the optician could have fitted him as well with but one cost, namely, the glasses? Because of greater confidence in the knowledge of the oculist. Many people when they first develop an optical defect do not understand the cause, thinking it must be due to some disease which the optician does not understand. It is the public confidence that we want. The operations for cataract,

whether by extraction or discission, for ptyrigium, strabismus, and even enucleation, are all simple, and cases needing these operations come before the optician almost daily, who must send them away. Of course, eye diseases are too numerous to mention here, but those that present themselves most frequently are granulation, ophthalmia, keratitis and retinitis, and occasionally the more serious ones, such as iritis and glaucoma; yet all their remedies are few, scarcely exceeding half a dozen, and may be quickly learned. Take boracic acid, zinc sulphat, atropia, eserine, cocaine, silver nitrate and yellow oxide away from the oculist and he could not successfully treat the eye; yet for administering these simple remedies he receives enormous fees. Often the case, a simple eye lotion would make a pair of glasses more satisfactory, but the optometrist is handicapped. Often strabismus could be corrected and cured more easily by the help of cycloplegia."

Such stuff is difficult of analysis. Surgical work, whose technical difficulties can be appreciated only by the experienced, are summed up as "simple;" a few remedies are enumerated with practical denial of any necessity for the medical training and discipline without which they are worse than useless; not a bit of recognition of systemic causes, and the whole mixed up with the naming of the intellectual giants who are to "hold the whole chair on the eye," "public confidence" and money. At the hearing we tried to find where these "best optical schools" are situated. If the Maryland opticians present knew, they would not tell. Among other optical schools mentioned, however, was the McCormick Optical College of Chicago, an institution from which one of the Maryland opticians had obtained the degree of Doctor of Ophthalmology. From the *Optical Journal* of October 20, 1904, Dr. John C. Bossidy of Boston, in a recent article on "The Optometrist," quotes this advertisement of the McCormick College: "I will, for \$25 cash with order, give a correspondence optical course that will make the others sick; degree, Doctor of Ophthalmology." Whether or not the college issuing this announcement six years ago remains on the same elevated scholastic platform our Maryland opticians did not seem to know. One of them, himself a doctor of ophthalmology from a number of optical schools, told us that courses varied from eight days upwards. By this was apparently meant that if a man could master all the information in eight days, which some of them did, he might get his degree in that time. Dr. Frank Van Fleet of New York wrote me that at one time a school of optometry had been instituted in New York city, but had gone out of existence "through internal strife and lack of support;" also that a school had been established in Rochester, but he did not know how well it was attended, nor did he give its standard. However, in New York the whole thing is under control of the Board of Regents, an institution which does not exist anywhere else. Hence, in considering the matter, one must put New York State in a class by itself. Our own opticians defended the right of calling themselves "Doctors" if such schools as the McCormick gave them de-

grees. This, I believe, is a fair specimen of their present standard. The quotations from Mr. Hudson's paper are supported by questions from examination papers. One finds questions regarding pathological eye conditions, the very phraseology of which shows the superficial nature of instruction. At the same time, they confirm the aim of optometrists. Oculists are teaching internists many early signs of systemic disease, some of which signs are functional. On the other hand, oculists are learning from general pathology much hitherto unknown about causation of eye lesions. If the optician, with his new name, has his way, ophthalmology will be given a more "popular" name, and all save what the tradesman thinks essential in eye diseases will be eliminated from the course of instruction. Legislation is looked for to legalize all this. Legislators will go for counsel in matter pertaining to medicine to their physicians. Are physicians making themselves capable of advising those charged with making laws? They can easily become so if they recognize that in this day of special study and practice no one man can follow everything. Then, when one is asked for advice in a branch of medicine, of which he confessedly knows little, consultation with a brother practitioner who does know may save him from an action of which later he will be heartily ashamed. And this is the real lesson of the optometry bill. Doubtless it will come up again. I am free to confess that in my judgment it should come up, and that it should come from this very body. The new optometry bill, if you choose to call it such, should carefully define what a competent optician can safely do. From his sphere of work everything should be eliminated that goes beyond correction of such refraction errors as experience shows can be safely corrected without medicines, and with restoration of normal vision. But this is not what he wants. He is after a new profession, or, more properly, bent on debasing a branch of progressive medicine to his own mercenary ends. Wherever he has succeeded it has been through thoughtless endorsement from the general profession. Where this endorsement has been withheld, and the medical profession has seen through the thin veneer, he has failed; but victory for medicine has meant ceaseless effort.

I feel that in presenting this subject to the Faculty we should publicly thank Drs. Bossidy of Boston, Thorington of Philadelphia and Van Fleet of New York for the instruction and guidance they have given us. Senators Linthicum and Moore, aided by Dr. Miller, in the State Senate, worked against the bill, and did all they could to prevent its passage, while our old friend Dr. Ashby, who fought his own bill, knows what we think of him. Many physicians of the city and State aided by trying to influence their legislators and urging the Governor to veto the bill when passed.

842 Park avenue.

CARE AND TREATMENT OF EPILEPTIC INSANE.*

By J. Clement Clark, M.D.,
Superintendent Springfield State Hospital for Insane.

LIKE insanity, epilepsy in ancient times was regarded with superstitious awe, and the belief was generally held that the subject was possessed by a demon from which he vainly strove to free himself, others thought that he had been struck by a star, hence it was called "Morbus Sideratus," The Star Struck Disease, while still others thought that he was suffering punishment inflicted by a Deity whose anger he had incurred; and the crudeness of the methods of treatment equaled the preposterous beliefs as to its etiology.

In looking over the history of the disease we find that up to a comparatively recent period it was treated with much superstitious and ridiculous remedies, as an extract of earth worms in the skull of a criminal, or rum in which snakes had been steeped, and similar equally atrocious concoctions, showing both the absolute ignorance of the nature of the disease and also the superstitious dread that was inspired by the awful convulsive seizures.

The disease from the dawn of history has been shrouded in mystery, and even at the present time, when we look with pardonable pride on the wonderful advancement that medical knowledge has made, there is still grave doubt and much speculation as to the exact nature of the malady, what its etiology is, and what methods of treatment should be adopted to blot from the face of the earth this horrible disease, which from the earliest era of civilization down to the present time has made countless millions mourn.

We find it hard even to define epilepsy in concise terms, since it is a disease partly mental, partly physical, at one time presenting as its most marked symptom the mental phase, and at another showing physical symptoms alone; but in lieu of a better definition we may accept that of William Aldren Turner of Eding., who defined it as "a chronic progressive disease of the brain characterized by the periodic occurrence of seizures in which loss of consciousness is an essential feature; commonly associated with convulsion and frequently accompanied by physical phenomena of a well-defined type; occurring generally in persons with an hereditary neuropathic history, which shows itself in signs, or stigmata, of degeneration; running its course uninterruptedly, or with remissions, over a number of years; and terminating either in a cure, in the establishment of the confirmed disease, in delusion insanity, or in dementia."

We know from statistics carefully compiled that epilepsy is a disease essentially of the young.

*Read at the meeting of the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics, held in Baltimore on May 7, 1910.

Three-fourths of all cases of true idiopathic epilepsy come on before the patient is twenty years of age, and nearly half of all cases between ten and twenty, the greatest number beginning at the ages of fourteen, fifteen and sixteen.

One-eighth of all cases begin during the first three years of life, and after twenty years of age the number of new cases falls very low.

We also know that unless early and faithful efforts are made to arrest the disease, mental and physical deterioration will *inevitably* set in and our patient becomes a hopeless case of epileptic dementia, and these facts bring us up to the real object of this paper, which is to advocate in unqualified terms the *separation* of the sane from the insane epileptics and other insane patients.

The relatively small number scattered through most of the ordinary hospitals for the insane makes their satisfactory treatment impossible.

Institutions for the care of epileptics have been established in seven States of the Union during the past twenty years, but in only five States has any special care been provided for the insane epileptic.

In Kansas, Ohio, Massachusetts, Texas, Florida and in our own State of Maryland insane epileptics are cared for in the same buildings, and in some of these institutions intermingled indiscriminately with the sane epileptics.

Virginia, we understand, is making an effort to establish a colony for her insane white epileptics in connection with the State Hospital at Lynchburg.

In New York State, the second State to found a colony for the care of the epileptic, the law governing this institution states very clearly that no insane epileptics shall be received at the colony, and further states that an epileptic becoming insane shall be committed to a State hospital.

We can realize what a severe mental shock a sane epileptic patient undergoes, whose mind has been practically unimpaired by his infrequent attacks, to see constantly the frightful condition of those who have the same epileptic seizures that they themselves are having, and who under the increasing frequency and severity of these dread attacks have lost their reason and degenerated into mere machines, poor shattered wrecks, derelicts aimlessly and dangerously drifting about on the sea of life, a source of constant worry, dread and repugnance to their fellow-man.

Can we wonder that such constant examples of what the disease may lead to will frequently bring others to feel that their reason is tottering on its lofty throne, and that finally the mere idea of the fearful thing itself causes them actually to become insane, and in very truth join the dread ranks of these almost hopeless unfortunates?

In our institution we have had several such cases who have had very infrequent attacks, and who between these attacks were practically unimpaired. These men and women by force of circum-

stances were compelled to live day in and day out, side by side, with epileptics who had from one to a dozen or more convulsions a day, and some who had become hopelessly and pitifully demented.

We have had these same practically sane patients come to us and *beg* to be separated from the demented ones, and tell us that if they stayed on the ward with them they would surely lose their minds.

Wherever it was possible we moved them at once, but sometimes it is *impossible*, as in order to move them you would have to put them on a ward with patients who were not epileptics at all, and we can understand what a severe shock it would be to some of these to see an epileptic attack for the first time.

I recall vividly the mental picture made upon my brain by witnessing for the first time as a schoolboy a comrade fall in one of those horrible convulsive seizures to which he was subject.

To my mind there is nothing more heartrending, and more tremendously shocking, than to see for the first time this awful spectacle. The mental agony forms an indelible impression which remains for years.

Unfortunately, we are situated between "Scylla and Charybdis." On the one hand, the demented insane epileptic, who is a source of danger and dread to the *sane* epileptic; on the other, the sane epileptic, whom we feel must be separated from all patients who are *not* insane or epileptics.

Without separating the classes of these patients it is almost impossible to regulate the dietary of those who should have special kinds of food and drink—*sine qua non* in treatment of epilepsy.

On account of some who are unfit to go to the various amusements provided for patients, others who could go, and probably would benefit by the entertainment, are often compelled to stay away.

Another plea for the separation of the insane epileptics from the sane, and also from the insane who are not epileptics, is upheld by the fact that during the period of maniacal excitement which comes to so many of them they often become very violent and are then an actual source of danger to the peaceable sane patients.

In our institution we are making an honest effort to carry out this policy.

At our group for women we have an entirely separate building for the insane epileptics, including not only a separate ward, but a separate dining-room and kitchen as well.

On the other hand, at our group for men, while we have the insane epileptics in a separate ward from the patients who are not epileptics, this building forms one of the entire group, and is closer than is desirable to the others, while owing to the crowded condition of the hospital and the constantly increasing number of all kinds of patients, we are at present compelled to feed the insane epileptics in the same dining-room with the other patients.

Therefore it is proposed by the management of the institution

as soon as it becomes practicable to establish a separate colony for our insane epileptics of single-story cottages, forming a group like the present ones, thus affording not only separation, but a scientific classification of these patients similar to that of the general insane.

We now have at Springfield State Hospital one thousand patients, of whom 131 are insane epileptics.

In the State of Maryland at the present there are 295 insane epileptics, according to the statistics in the office of the Secretary of the Lunacy Commission.

Upon the fulfillment of the statute regulating the State care of the insane we will have about two thousand patients; out of this number, according to our present ratio of 1 to 8, we will have probably 260 or 300 insane epileptics, which number would justify us in building a separate colony. This would also relieve our present crowded condition, allowing more room for the non-epileptic insane. With 728 acres of land there is ample room for such a colony.

In regard to treatment: First of all, in every case, we must make a careful physical examination in order to find out if there is any organic trouble, or source of constant irritation, which might be the direct exciting cause of the attacks. Should this be found, it must necessarily be removed at once. The condition of the digestive tract must be looked into, and so far as is possible all digestive disturbances and sources of autointoxication should be combated.

Medical Treatment: Unfortunately the medicinal treatment has proven most unsatisfactory. A very large number of drugs has been used in attempts to alleviate or cure the disease, among which have been the Bromides, Chloral Hyd., Nitroglycerine, Borax, Zinc, Solanum, Tct. of Sinulo, the Coal Tar derivatives, Iron in various forms, Chloroform, various serums, etc. All of these have had their special advocates, and all are more or less unsatisfactory.

In our experience the judicious administration of the Bromides has proven more beneficial than any other drugs.

It is certain at the present time we know of *no* curative medicinal remedy.

As to the general treatment, it is now universally recognized that epileptics as well as the epileptic insane are best treated and cared for in institutions where the following methods are in vogue: 1st. A simple mode of life, with the strict avoidance of excitement and abstinence from alcoholic liquors. 2d. Regular and congenial employment best suited to the individual mental and physical condition of the patient. 3d. A certain amount of both work and play, with the simpler forms of outdoor exercise. 4th. The reduction of the usual sedative medicinal remedies to a minimum amount.

We feel that our remarks on the treatment of epileptic insane would not be complete without a few words on the subject of

heredity. Since heredity is universally recognized as the strongest factor in its production, our treatment should primarily consist in an earnest effort to educate the public in the knowledge that the children of alcoholics, to the extent of one-third, are epileptics; the intermarriage of degenerates and imbeciles swell the number alarmingly. Hence let us begin our treatment one or two generations ahead of the birth of our patient by using every means to prevent his being born an epileptic.

CLIMATIC, SOIL AND GENERAL CONDITIONS IN MARYLAND WITH REFERENCE TO HOOKWORM DISEASE.

By Marshall Langton Price, M.D.,
Baltimore, Md.

IN accepting an invitation to prepare a paper upon hookworm disease, I must confess in advance that my knowledge of the disease is all at second hand, though I have made studies on some of the nematode parasites more or less closely related to the "*Necator Americana*." For these reasons I have left the symptomatology and treatment to Dr. Stiles and Dr. Rankin, who are better qualified by knowledge and experience to deal with this subject, and have addressed myself to two questions which appear to me of the highest practical importance as far as this State is concerned. These questions are, first, Is hookworm disease prevalent in Maryland? Second, Are the conditions in this State favorable to the prevalence of hookworm disease at some future time?

With the object of finally deciding this first point, I have addressed inquiries to the general hospitals of Baltimore city and the general hospitals in the country districts receiving State subsidies (which includes practically the entire number), to the two insane hospitals maintained by the State, to the Maryland House of Correction, the Maryland Penitentiary and the City Jail. It was not believed to be profitable to address the several county almshouses, as many of the almshouses only have medical attendance at irregular intervals, and none of them have laboratory facilities for diagnosis.

In all about 50 hospitals and institutions were addressed, pretty well distributed over the State and covering a wide range of climatic, soil and general sanitary conditions. The period covered by the inquiry blanks extended from January 1, 1907, to December 31, 1909, and referred only to cases treated in the several institutions.

The schedule of inquiry covered the following points:

1. Date of contracting disease.
2. Residence of patient.

3. Place where the disease was contracted.
4. Age of patient.
5. Mode of infection: (a) through the bare feet (ground itch); (b) polluted water; (c) contaminated vegetables, etc.
6. Color.
7. Sex.
8. Occupation.
9. Social and financial condition. (The last item of the schedule classified the social condition as good, medium, poor and very poor.)

Completed schedules were received from the following hospitals and institutions: Hebrew Hospital, Baltimore; the City Hospital at Bayview; St. Agnes' Hospital, Baltimore county; the Maryland House of Correction, Anne Arundel county; the Cambridge Hospital, Dorchester county; Emergency Hospital, Easton, Talbot county; Emergency Hospital, Annapolis, Anne Arundel county; the U. S. Marine Hospital, Baltimore; Maryland Hospital for the Insane at Catonsville, Baltimore county; Second Maryland Hospital for the Insane, Springfield, Carroll county, and the Baltimore City Jail. Total number of institutions returning completed schedules, 11.

Though the schedules returned covered a period of three years, all of the institutions reported that their records showed no cases of hookworm disease treated during this period. It is assumed that the institutions failing to return completed schedules had only negative reports to make, as otherwise they would certainly have returned full data. Now as to the value of this evidence (which is, of course, it must be admitted, purely negative). It must be conceded that light attacks of hookworm infection may easily occur without recognition (such infections in many localities outweigh the number of "moderate" and "severe" infections). It is not improbable that light infections occasionally occur in Maryland; indeed, I would think it improbable that they do not. We could scarcely conceive, on the other hand, of hookworm disease existing in Maryland to such an extent as to justify the term "prevalent" without cases of the "moderate" and "severe" type accompanying the "light" infections. The only remaining question, therefore, is, Are we having cases of hookworm disease of the moderate and severe types which our physicians are failing to diagnose? A careful consideration of the conditions existing in this State leads me to answer this question in the negative.

Practically all of the general hospitals in Baltimore receive patients from all over the State for treatment in free State beds. The same rule applies to the general hospitals in the counties. It has been my experience that the staffs of all the general hospitals in this State are alert to examine into carefully all of the possible causes of unexplained anemias, and not only is the attention directed to the alimentary tract in all such cases, but intestinal parasites are almost immediately suspected as a possible etiological factor. In my personal hospital experience of two years I can recall

no case of a resident of Maryland where infection with hookworm could have been considered likely, though the hospital with which I was connected received and treated an unusually wide range of anemias, among which I recall numerous cases of severe malarial infection, cachexias of malignant growths, one case of pernicious anemia and several secondary anemias due to internal hemorrhage. We can hardly believe, also, that some of the "severe," if not of the "moderate," cases (if many exist in the State) would not have fallen into the hands of our consultants, than whom, as diagnosticians, no State in this country can show any superiors. Moreover, in my own very extensive travels over this State I have never observed an individual suffering from the striking and characteristic cachexia which Dr. Stiles has so graphically described. All of these reasons present, in my mind, strong, if not conclusive, evidence that hookworm disease is not prevalent in Maryland.

Dr. Stiles states that hookworm disease is seldom found north of Maryland. He further states that, for practical purposes, the zone of prevalence of hookworm disease is bounded on the north by the Ohio and Potomac rivers. I would make this statement even stronger, and say that hookworm disease is rare north of the Potomac river.

II.

We now have to address ourselves to the second question, namely, Are the conditions in this State favorable to the prevalence of hookworm disease at some future date?

There are three important factors to be considered in the prevalence and spread of hookworm disease, which are arranged, as far as possible, in order of importance: First, climate; second, soil, and third, general sanitary conditions. Under the latter heading the most important factors are (a) the means of disposal of human sewage and (b) the use of shoes. It is probable that all three of the important factors cited must be present before hookworm disease can become prevalent. A correlary problem to the main question will be: If hookworm is a rare disease in Maryland, as already indicated, what are the reasons why it has not become more prevalent?

To consider first the question of climate: Along the southern and western boundary of Maryland lie Virginia and the District of Columbia, the two territories which I have taken for comparison. The District of Columbia can well be eliminated, as its boundaries are practically co-extensive with the city of Washington, and, as Stiles and others have clearly shown, hookworm disease is not a disease of cities, but of the country. The comparison of Maryland and Virginia is more interesting and instructive, because, although rare in Maryland, hookworm disease is relatively very common in Virginia. Contrary to what is generally supposed, the difference in latitude of the two States is not very great. The eastern shore of Maryland, including the two counties of Virginia, extends al-

most to the southern boundary of Virginia, while the greater part of Virginia lies as much to the west as the south of Maryland.

Mr. Alexander, in charge of the Weather Bureau in Baltimore, has kindly furnished me with figures of mean temperature for Maryland, Delaware, Virginia and the District of Columbia. These figures are as follows:

Mean annual temperature for the whole of Maryland....	55	F.
Mean annual temperature for the whole of Virginia.....	55.9	F.
Mean annual temperature western division of Maryland..	51	F.
Mean annual temperature north central division of Maryland.....	53	F.
Mean annual temperature southern division of Maryland..	56	F.
Mean annual temperature eastern division of Maryland and Delaware.....	55	F.
Mean annual temperature for the District of Columbia....	55	F.

It will be seen that on comparing the whole of Maryland with the whole of Virginia that the mean annual difference in temperature is less than a degree Fahrenheit—55:55.9. These figures are by no means, however, to be taken at their face value. Both the western portions of Maryland and Virginia are traversed by ranges of the Cumberland mountains, which exercise a considerable influence upon the mean temperature of the whole States; more, perhaps, in the case of Virginia than in that of Maryland. Mr. Alexander is inclined to ascribe to Chesapeake bay only a local influence upon the climate. He admits, however, that in the comparatively narrow Eastern Shore, with the ocean on one side and the bay on the other, the climate must be considerably modified. It is well known that the effect of large bodies of water is to mitigate the extremes of temperature, and we would, accordingly, expect Virginia to have, notwithstanding its comparatively low mean temperature, a prolonged hot season, a condition known to be favorable to the hookworm parasite.

This brings us now to the consideration of the second important factor, namely, soil. Dr. Stiles has frequently pointed out the importance of soil in maintaining and propagating the hookworm. As he has shown, it is the loose sandy soils, preferably in damp low-lying districts, where the hookworm propagates with most readiness. Dr. Stiles has also shown that the soils of stiff clay are generally immune to infection. There are probably several reasons for this. Sandy soils, particularly when low-lying, will retain moisture for long periods, and we know that drying will destroy the hookworm larvæ. Clay soils generally allow the surface waters to flow off rapidly and become baked on the surface. It is probable, also, that the soil must be sufficiently light and porous to permit a certain amount of motion to the larvæ to assist them in the successive shedding of their skins or envelopes, as well as to allow them to enter the bodies of another host.

I have here a map which was kindly furnished to me by the Maryland Geological Survey, which illustrates the soils of Mary-

land. The details of the map are somewhat confusing, inasmuch as it presents geological formations as well as soils. It will be sufficient to remember, however, that the green and yellow areas lying south-east of a line drawn from Port Deposit, Md., to the northwestern boundary of the District of Columbia are the parts of the State where the soil is light and sandy, and where it would be most liable to become infected with hookworm. Those of you who have examined the map which I prepared for the National Drainage Congress from figures furnished by Dr. Watson of this city will notice how closely it corresponds to the territory laid down by Dr. Watson where malaria was once prevalent, and where it still lingers in a few scattered localities. Undoubtedly, the soil and topography are the main elements which once made this area malarious. These loose sandy soils in Maryland are generally cultivated in tobacco and truck crops.

We have now to consider the third important link in the chain of hookworm infection, namely, general sanitary conditions, with particular reference to methods of disposal of human sewage.

Dr. Stiles has properly laid great stress upon the privy as an important factor in the fight against hookworm disease. The absence of privies has been shown to be a great factor in the spread of hookworm disease. The larvæ of hookworms are not only spread by the feet, but commonly make their attack upon a new host through the feet. It can be readily understood how a soil can be widely infected if there is no particular place provided for the disposal of human excrementitious matters. Sanitary offenses in this regard may be stated in order of their importance as follows: First, no closet; second, surface closets; third, closets with dug pits; fourth, closets with water-tight boxes. As regards surface closets, and those with dug pits, the general dangers are known to be surface pollution of water supplies and subsoil pollutions of wells. The latter danger also applies to dug pits. I am inclined to think, however, that subsoil pollution is not an important factor in hookworm disease. It appears to me inconceivable that larvæ as large as that of the hookworm will pass for any considerable distance in a sand and gravel subsoil, especially at the depth to which the average well is dug. It is well known that another menace from privies in country districts is the common house fly, or "typhoid fly," as Dr. Howard has christened him. I am of the opinion that this cause must also operate in a very minor degree in causing hookworm disease. The adult male hookworm measures from 7 to 10 mm. in length, and the female 10 to 18 mm. While the larvæ are very much smaller, they are still very large when compared with the size of the feet of the house fly, and adventitious infection conveyed in this way must be very infrequent.

Probably these reasons go far to explain why direct skin infection (the ground itch) should be relatively so frequent. The ultimate destination of the hookworm is the duodenum, and it would seem at first glance that by far the largest proportion would reach that destination through the stomach and esophagus, but clinical

experience does not accord with this view, and, in fact, leads us to believe that alimentary infection is not very common. It has been repeatedly shown that larvæ entering through the skin must pass into the circulation, travel with the circulation until arrested by the capillaries of the lung, pass up the trachea, and finally descend through the esophagus and through the stomach into the duodenum.

The wearing of shoes thus cuts off a large part of the infection, and a privy, even of a relatively poor kind, another large part. Only a small part of the population of Maryland now goes barefooted, and practically none of the adults, either white or colored. The use of privies, so far as my experience of this State goes, is practically universal.

Another condition which has been a permanent menace to the people of this State, and which might well cause the dissemination of hookworms, is the use of night soil for fertilizing. The use of this material is, however, confined to small areas of Baltimore and Anne Arundel counties in the immediate neighborhood of Baltimore.

Ova of the tapeworm (*tania solium*) have been found upon vegetables fertilized in this manner, and there is no reason why the larvæ of hookworms should not also be swallowed with raw vegetables, such as lettuce and cabbages, fertilized with night soil. Practically all of this night soil, however, comes from Baltimore city, where the hookworm disease is naturally unknown, and to this fact can be ascribed the immunity of those who use the produce from this district.

The State Board of Health about one year ago issued stringent regulations governing the use of night soil, which it is endeavoring to enforce as well as its limited appropriation and force will permit.

I have drawn some conclusions from this investigation, subject to the usual limitations which other investigators reserve to themselves when they find their theories in conflict with the facts:

First—That hookworm disease is not prevalent in Maryland.

Second—That neither climate nor soil fully explain our relative immunity.

Third—That the immunity of this State is probably best explained by the practically universal use of privies and the widespread use of shoes.

Fourth—That the use of proper privies and the use of shoes is constantly increasing.

Fifth—That hookworm disease is decreasing everywhere with improved sanitation.

Sixth—That the chances of hookworm becoming widely prevalent in Maryland at any future time are small.

NOTE.—Dr. Rohrer states that about one-third of the boys in the rural districts during his youth suffered from "cow-itch." This statement applies to Washington county.

THE DIFFERENTIAL LEUCOCYTE COUNT AS A DIAGNOSTIC AID.

By Solomon Cherry, M.D.,
Resident Pathologist, Hebrew Hospital.

THAT the total leucocyte count is of great value is now well recognized, but aside from its presence or absence, nothing very definite can be learned from it, except in a few instances: for example, a count of 20,000 or more in suppurative appendicitis, 18,000 to 30,000 in pneumonia and cerebral spinal meningitis.

The attempts to base the prognosis of a case upon the leucocyte count, and to determine by it whether or not pus is present, have proven failures, as a rule, with one exception; that is, appendicitis. In 1906 Sondern, after a review of many cases, expressed the opinion that the total leucocyte count represents the degree of resistance of the patient, while the percentage of polynuclear cells present was a direct index of the severity of the infection. Normally, the percentage of polynuclear cells is about 70 after the age of 14. In children it is 35 per cent. during the first year, and gradually rises to 60 per cent. by the tenth year. According to Sondern, therefore, the higher the rise in the percentage of polynuclear cells above normal, the more severe is the infection.

Many other papers have since been published along this line, and Sondern's conclusions have been eminently justified.

In the same disease there are often great variations in the total leucocyte count. Thus, in one of our cases of general peritonitis, the count was 12,800 per c. mm., while in another it was 110,000, but in both of these cases the percentage of polynuclear cells was above 85. Fluctuations of the count are often seen in the same patient; thus there may be a drop in the total count, while the percentage of polynuclear cells may either rise or fall, showing either an increase or lessening of infection.

This remarkable constancy of the percentage of polynuclear neutrophiles offers a most valuable aid to the surgeon in the diagnosis of infections, especially in the abdomen. For the internist it will confirm nearly every diagnosis of pneumonia, and help him make many when the other signs are not very certain.

I. INTERNAL INFECTIOUS PROCESSES.

In January, 1909, Coons and Bratton reported in the *New York Medical Journal* a number of cases of appendicitis, all accompanied by pus formation. The blood picture in these cases was as follows:

- (a) Acute suppurative appendicitis, 41 cases. In 26 of these the percentage of p. n. was between 80 and 90. In one of these it was 91 per cent.
- (b) Abscesses, 62 cases. In 30, the percentage of p. n. was between 80 and 85; in 17, the percentage of p. n. was below 80; in 13, the percentage of p. n. was between 85 and 90; in 2, the percentage of p. n. was above 90.

- (c) Gangrene, 22 cases. In 10, the percentage of p. n. was above 85; in 4, the leucocyte counts were normal, but the percentage of polynuclear was above 85. In one case the count was 4300, but the percentage of polynuclears was 79.8, and a chronic appendicitic, with beginning gangrene, was found.
- (d) Perforation and peritonitis, 45 cases. In 36 cases the percentage of p. n. was between 85 and 90, while the total counts ranged between 10,000 and 49,000.

In these 170 cases 57, or 33½ per cent., showed a p. n. percentage between 80 and 85, and 65, or 38.2 per cent., a percentage over 85, or, all together, 71 per cent. showed a percentage over 80.

Our own cases of pus appendicitis are tabulated below. In every acute case a leucocyte and differential count was made, and when the per cent. of p. n. was over 80, the presence of pus was diagnosed, and operation was performed as soon as possible:

No.	P. N. %.	W. B. C.	Remarks.
1	81.2	24,000	Acute Suppurative Appendicitis, Pus Culture B. Coli.
2	90.6	18,300	Abscess, Intestinal Obstruction.
3	84	22,000	Acute Suppurative Appendicitis.
4	84.3	36,000	Much free Pus in Abdomen.
5	91.4	36,600	2/6/10 Ochsner treatment used.
.		24,400	2/7/10
.		17,400	2/9/10
.			2/10/10 Operated; Walled-off Abscess found.
6	89	18,600	Following Appendectomy, wound opened; large Hematoma found.
7	88	29,200	Perforation, General Peritonitis.
.	86.6	12,800	Three days after operation.
.	77	10,000	Two weeks after operation Abscess pocket found.
8	85.4	21,200	Acute Suppurative Appendicitis.
9	88.2	32,600	Abscess.
10	91.8	31,600	Abscess.
11	87.2	13,800	Acute Suppurative Appendicitis.
12	88	33,000	Acute Suppurative Appendicitis.
13	98	110,000	Perf. of Stomach, Gen. Peritonitis.
14	89.5	17,500	Acute Suppurative Appendicitis.
15	80.45	10,000	Acute Suppurative Appendicitis.
16	88.6	13,200	Ochsner treatment, 3/8/09.
..	76	7,800	3/9/10—Gangrenous Appendix, Free Pus.

The diagnosis in every case was made before and confirmed after operation. In appendicitis, whenever the per cent. of p. n. is 80 or above, pus is almost sure to be present, and according to Fowler, a per cent. of 85 or more means that pus is never absent. However, when the per cent. of p. n. is low, that is, below 80, one cannot say that pus is not present, as is seen in Case No. 8, who, in spite of a p. n. per cent. of 77, was opened and a large walled-off abscess found; and in Case No. 16, with a drop to 76, who had free pus in the peritoneal cavity. When the per cent. is over 80, diag-

nosis is certain; when below 80, other signs and symptoms must be taken in conjunction.

II. OTHER PURULENT AFFECTIONS.

No.	P. N. %.	W. B. C.	Remarks.
17	90	26,000	Abscess of Breast.
18	86.4	31,200	Pus Tube.
19	88.6	25,600	Purulent Ovarian Cyst.
20	90.5	34,800	Infection following Tonsillectomy, Staphylococcus Aureus.
21	92.2	23,000	Burn with infection.
22	95.7	9,600	Puerperal Sepsis; died.
23	60.8	18,200	Empyema; age 19 months.
24	68.8	22,600	Empyema; age two years.
25	76	26,400	Cervical Abscess; age two years.
26	93	60,000	Pelvic Abscess.
27	85	19,000	Osteomyelitis of Humerus.

III. MASTOIDITIS.

Unless the adjacent structures, as the meninges or sinuses, are involved, it is unusual for the per cent. of p. n. to rise above 80. As an aid to the diagnosis of pus in the mastoid cells, it is uncertain. In our own cases, a differential count was made in three, and the highest p. n. was 77, although pus was present in each case.

IV. CEREBRO-SPINAL MENINGITIS.

Although not a surgical affection, epidemic cerebro-spinal meningitis is to be included among the purulent infections. In this condition we find a high leucocyte count and a uniformly high per cent. of p. n. The following cases are taken from Cabot:

No.	P. N. %.	W. B. C.	
a	95	51,200	Age 60.
b	94	40,000	Age 45.
c	72	35,000	Age 5.
d	93	35,000	Age 40.
e	82	32,000	Age 40.
f	91	25,000	
28	90	28,000	Age 18.

In Tubercular Meningitis the blood picture may be similar.

V. MEDICAL AFFECTIONS.

Of the medical affections, five are characterized by a high per cent. of p. n.—Asiatic cholera, yellow fever, pneumonia, septicemia and acute nephritis.

Pneumonia.—Soon after the initial chill there is a rapid rise in the number of white cells, which reaches 20,000 or more per c. mm. Successive counts often show marked increases, the rise being due principally to an increase in the p. n., which make up 80 per cent. or more of the total count. The blood picture is very distinctive, and its absence, unless the case is very mild, should speak strongly against the presence of pneumonia. A differential count should be made in every suspected case. Usually it is only confirmatory; often, however, it will be diagnostic, especially in children and in the very old. It is particularly valuable when the pneumonia is central, but still more so in those lobular forms where the physical

signs are obscure. In these latter cases the chlorides in the urine are often found to be normal. The count should begin to drop just before the crises, and reach normal in several days. Otherwise, resolution is delayed, or there is some complication. The differential count is then of no particular value, since the same picture would be found in a meningitis, empyema or pulmonary abscess. Differentiation from tubercular pneumonia is impossible by blood count.

The following is a list of cases:

No.	P. N. %.	W. B. C.	Remarks.
29	76	18,600	1/20/10, Central Pneumonia.
..	86.8	22,200	1/21/10
..	78	14,800	1/24/10
..			1/25/10, Crises.
30	75	70,600	Lobar Pneumonia; age three years; recovery.
31	87.8	31,400	Lobar Pneumonia.
32	83.8	27,000	
33	74.25	21,400	Temperature never above 102.
34	60.6	33,000	2/13/10; age two years.
..	79		2/15/10
35	76.25	39,200	
36	84	16,800	Broncho-Pneumonia; indefinite physical signs; Chlorides in Urine normal.
..	84.6	26,800	Two days later.
37	82	28,400	Broncho-Pneumonia.
38	84	28,000	Tubercular Broncho-Pneumonia.
39	86.4	22,000	
40	91	19,000	
41	86	38,000	

CONCLUSIONS.

(1) In appendicitis the per cent. of p. n. above 80 is almost certain evidence of the presence of pus. A per cent. above 85 means that pus is surely present, though the amount may vary from a few drops in the appendix to a large amount of free pus in the peritoneal cavity.

(2) This high per cent. of p. n. cells also points to pus wherever situated, although the strictly medical affections, such as septicemia, and acute Bright's disease especially, must be excluded.

(3) It is a valuable point in differential diagnosis between typhoid fever and osteomyelitis, and between typhoid fever and appendicitis, since in typhoid there is a leukopenia with a relative lymphocytosis, while in the others there is a leucocytosis with an absolute increase of p. n.

(4) In pelvic conditions purulent collections are readily distinguished from other growths.

(5) In mastoiditis the per cent. of p. n. does not, as a rule, reach 80, unless adjacent soft structures are involved.

(6) In pneumonia and meningitis the per cent. of p. n. is usually 80 or more. Often in obscure cases, in children, and in some lobular forms with normal excretion of chlorides, it offers a valuable diagnostic point.

GENEALOGICAL TREES OF EPILEPTIC FAMILIES.*

By Drs. E. A. Kennedy, A. V. Cooper, F. W. Guild.

FRANK AND JOHN C., brothers, age 14 and 13, respectively, were admitted to this hospital November 12, 1909, from the Hospital Cottages for Children at Baldwinville, where they had been inmates for about five years.

Frank C., as near as we are able to ascertain, was an average child at birth, but never became very strong. He had some of the children's diseases, but I was unable to find out just which ones from his aunt, whom I saw in South Boston, at her home. Patient is a feeble-minded boy at this time, and is confined to the bed the greater share of the time. He is unable to give any history of himself. Is fed a greater portion of the time. His teeth are poor; tongue is scarred. He has a good appetite, and his bowels are regular. The heart's action is irregular at times, but is normal in rate. Knee reflexes are more active than normal, and ankle clonus is present.

These are the most important points in the examination. His convulsions started at four years of age, and they occur at irregular intervals. They are mostly of a Grand Mal type. He has had several runs of hard spells since admission.

John C., the younger of the two, is stronger physically, yet has been infirm all his life to a certain degree. He had some of the children's diseases. Is feeble-minded, yet talks more intelligently than his brother. He is up on his ward each day, but is confined to the bed frequently. His knee reflexes are more active than normal, and ankle clonus is present slightly on each side.

These are the most important points of which I will speak. He began to have convulsions at two years of age, and has had them at irregular intervals ever since. He has both Grand and Petit Mal varieties. The family history of these boys is of great importance:

Patients' father always lived in South Boston, and was the main support of the house. There were living with him his mother, brother, sister and one daughter. Paternal great-grandparents were healthy, as near as we are able to ascertain. Husband was in Revolutionary War. Maternal great-grandparents, whose name was Mahoney, were healthy people, and died at advanced years. Paternal grandfather died at 68 years of age, due to general debility. At 32 years of age he had convulsions. He had several between this time and his death. The convulsions were more of a faint, and lasted only a few seconds.

Paternal grandmother, who is 80 years old in April, is perfectly well, and at this time is fairly well preserved for a woman of this age. She is free from epilepsy, and never has been ill, to speak of.

Patients' father, Peter F. C., died at age of 38 years. He was

*Read before the annual meeting of the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics, Baltimore, May 7, 1910.

drowned last May while out in his boat alone. It is thought that he had a convulsion and fell into the water. He was a man of strong constitution, weighed about 160 pounds and was 5 feet 5 inches tall. He was a man of fair habits, drank moderately and was a hard worker and good to his family. He was a good swimmer and a great hand about the water. Mr. C. worked for the Empire Brewing Co. His daughter, Laura, states that she saw her father have a fainting spell six years ago, following a fright he received when a nephew was drowning. A man who worked with him for six years stated that he had seen him in several light spells, and also three hard attacks.

Patients' mother died at 29 years of age, following pneumonia. She was a woman who drank to a certain extent, and was not agreeable to get along with as a rule. She is described as having an ugly disposition. She was never sick to speak of, has no history of epilepsy or insanity and was free from premature deliveries.

Paternal brother, William C., is alive at this time. He is 36 years of age, is a strong man, rather short and fleshy—weighs about 150-155 pounds. He does not do any work, and is a confirmed drunkard, spending most of his time around saloons. He is obstinate, and not very easy to get along with. He had convulsions when teething, which lasted until he was two years of age. He was free from them until he was 15, when they began again. He has had them at irregular intervals ever since. Of late they have occurred about once a month. They are Grand Mal attacks, and he usually bites his tongue.

Patients' sister, Laura, who is now 17 years of age, is a girl perfectly well and working every day, trying to support those at home. There are living at home her paternal grandmother, her aunt and uncle. One sister died during teething; cause not known. Last girl died at three months of age from marasmus.

This gives us epilepsy in these two patients, their father, paternal grandfather and father's brother.

I also wish to speak of another case briefly—Ellen E. B., who was admitted March 28, 1899, and died November 8, 1905, in an epileptic convulsion.

Her physical examination is unimportant. She frequently had attacks of indigestion and vomited. During her attacks it was not unusual for her to fall and cut herself.

While here she averaged from 1 to 4-5 spells each month. She began to have attacks at 25 years of age. Previous to this she had chorea. Her maternal grandfather had epilepsy. Her son, who is a married man with children, began to have convulsions at two years of age. His two daughters, who are in the twenties, are both very nervous, and I understand one has epileptic attacks. Have not been able to locate father, so I am unable to confirm this statement.

This gives us a history of patient's grandfather, herself, being epileptic, and probably their son's daughter.

E. A. KENNEDY, M.D.

J. P. C., Jr. Male patient at this hospital. Admitted June 5, 1902.

Mother died of cancer at age of 38 years; outside of this health always good. Rest of her family history negative, as far as known. Birthplace was in England, and she was an actress by profession. Father is still living; born in England in 1847. Came to this country with his parents at age of four years. Childhood was normal, and nothing of interest about it.

When he became a young man he received a position as stage-hand, and worked about the theater in various capacities for next few years. Became interested in study of therapy and oriental religion, and gave up work. Spent all his time in the study of his new subject. Became so devoted to it that he had frequent intervals of fast and meditation. Following one of these periods, in 1881, he became insane. Went into a trance, and remained in this condition for some length of time. When he arose from this, he had lost entire control of his body. Said that he remembered all that happened about him, but had no control of his actions. Entered Danvers in July, 1881, for treatment, and came out improved in October of same year.

Remained out of hospital for next 18 years, and was able to take care of himself, although mentally he was somewhat disturbed and melancholy.

On February 27, 1899, his trouble became more serious, and he was admitted to Boston Insane Hospital for treatment of acute melancholia. At this, patient said: "I have a great fear all the time through my bowels. I am depressed; I am excited at times. When people are near me I cannot stand them, and have to go away from them." Afraid that he cannot control himself; afraid that something is going to happen to him all the time. Patient's appearance and manner were apprehensive and much depressed. During the time he was at the hospital he was subject to frequent attacks of vertigo, nervousness. Claimed that his power of attraction was diminishing. Had peculiar, vague sensation in abdomen and chest. Is afraid that he might lose control of himself again. Complained a good deal of pain and pressure at vault of skull. Delusions of religious and spiritualistic nature.

Later improved somewhat, and left hospital about 1903. Since that time has spent most of his time in writing and studying along same lines as before. Makes living by writing articles for papers and magazines.

His appearance now is the same as before, and he is still subject to periods of depression, but not so much as to be dangerous to himself or others.

Father had two sisters, both of whom were older, and whose history is negative. One younger sister is said to have been insane. Youngest girl in family had good health, and history was negative. Father's mother was insane after climacteric, but nothing of her history could be learned. Father's father always well and healthy. Nothing is known of grandparents of mother's side of family.

Patient was born in New York city August 2, 1867. Childhood was like that of other normal children. Nothing noteworthy about it. Had ordinary diseases of childhood. At nine years of age was sunstruck while in the street, and was removed to Roosevelt Hospital for treatment. Following this had spinal meningitis for a period of eight or nine weeks.

While he was in the hospital his mother died, so when he was discharged from the hospital he was placed in the care of father's youngest sister. Here he was not properly looked after, and suffered a great deal from gastric intestinal disturbances. Would overload his stomach, go to bed, to be seized with vomiting attacks and go into convulsions. Bowels were much constipated, and sometimes would not move for three or four days. Suffered from a good many attacks until 15 years of age, when they lessened in number, and patient had comparatively good health until 19 years of age. During this period he was away from home, and out at work for himself.

At 19 he enlisted in the United States Army, Third Infantry, as musician, and the attacks came on with renewed frequency. Think it was due to lack of exercise and sedentary life. Had a great deal of gastric intestinal disturbance. On account of illness was discharged from army, and then went to New York, where he worked the next six years as musician in various theaters.

Had attacks from time to time, but not so often as while in army. After this he went to Farrington, Conn., to visit aunt, and while there had numerous convulsions; so many, in fact, and their effect was so detrimental, that his father came on from Boston to take care of him.

Was taken to Boston and admitted to Boston Lunatic Hospital February, 1888. Was in a state of incoherence and excitement, following seizure. In November, 1889, he was transferred to Worcester Insane Hospital. Here he had convulsions every two months, followed by stupor, lasting 24 hours or so; then exhilarating, silliness, confusion, noisiness.

Took about a week to get back to normal condition. Also at this time troubled with amnesia for 10 to 12 days at a time.

On June 5, 1902, was transferred here. Has attacks every month, anywhere from four to five in number. Usually come close together, and are followed by periods of confusion and so forth, just the same as before. Mental power is gradually failing, although physical condition is good.

Physical examination of patient perfectly negative.

Summary.—Father's mother insane after climacteric. Father and sister insane. Son insane epileptic.

A. V. COOPER, M.D.

In presenting the following case, it is intended to give an example of a type of epilepsy in which heredity is an important etiological factor. The heredity here existing is not direct, but convergent and dissimilar, the parents not having the disease, but

lacking in mental development and demonstrating certain degenerative proclivities.

From the family history of the case it will be seen that degenerate tendencies first demonstrate themselves with a degree of certainty in the maternal grandparents.

The patient, G. E., a female, is 22 years of age and, except for epilepsy, is apparently in good health. Her history follows:

Maternal grandparents said by patient's sister to have been insane. They are reported by patient's aunt to have sold their daughter, the mother of the patient, to a neighbor in return for a dog. This was when the child was three years of age. It was not until she was married that she found out what her real name was. Soon after this trade was made, the patient's grandparents separated, and did not live together again. Other facts concerning dementia unknown.

Patient's mother is fairly well, although subject to very severe headaches and violent fits of anger. She is 47 years of age. She shows marked signs of feeble-mindedness, evidenced by a lack of the power of concentration of thought and action with pronounced antigrade amnesia. When asked her age, said she was 37, when, in fact, she was 47. Owing to her inability to educate and properly bring up her children, they have, at various times, been taken from her, to be cared for by the State Board of Charities. This board has had nine of them among its charges. At the present time the mother does not know where her children are, and apparently cares less. She stated that she had heard that one of them, a boy 19 years of age, had just died, but did not know whether or not it was so.

She was slovenly and dirtily dressed in a wornout garment. With her hair uncombed, retreating forehead and receding chin, she presented an appearance of a feeble-minded individual.

She was seen to give a handful of sage to her little girl, an epileptic. When asked about it, she said that she guessed it would not hurt her.

All her labors have been normal, with the exception of the last, which was a precipitate one.

Patient's father is 57 years old, and in apparent good health. He says that he is especially subject to dropsy and rheumatism, as were also his father and grandfather. Claims never to have had venereal trouble of any kind. Uses tobacco and liquor in moderation; the latter only when unwell. He lives with his family in a small, single-roomed, tumble-down shack some distance from the road and back in the woods. Although physically strong, his mental development is below par, as demonstrated by his habits of life and his environment.

These parents have given birth to 14 children, the first six of whom show no signs of mental defect. The child of one, however, was born at full term, weighing two pounds. It lived to be six months old and five pounds in weight. At this time it died of con-

vulsions, which at that time were said by the physician to be either epilepsy of meningitis.

Sister, Annie, four years her senior, is an epileptic and an inmate of this hospital. Her epilepsy is idiopathic and of the Grand Mal type. She has, at various times, been treated for status epilepticus. Mental development is fairly good.

On examination she shows evidences of an old left hemiplegia, with increased reflexes.

In features and general appearance this patient resembles the father.

Patient's brother had epilepsy when a few weeks of age, demonstrated by typical Grand Mal attacks. Died in convulsions at seven weeks of age.

Patient's sister, Bess, now living at home, has been epileptic since one year of age. During infancy and early childhood she was not a backward child. Since the onset of her disease she has been gradually failing mentally until, at the present time, her mind is almost gone. Her epilepsy is of the Grand Mal type, with intermittent Petit Mal seizures. She has been treated for status epilepticus. On examination she is a well-developed child, with the exception of a congenital union of the second and third digits of both hands. Features and general appearance that of mother.

Another sister, Marion, now 29 years of age, has never been seriously ill, but has always had weak eyes. This tendency, perhaps a degeneracy, was conveyed to her children. The older, now seven years of age, has, like her mother, no other ailment. The younger was born in April, and at that time was said to be "stone blind." The nature of the child's disease could not be ascertained, but as far as could be learned, there was not an acute conjunctivitis. The parents also claimed that they had never had specific urethritis, and could give no reasonable cause for the trouble. This child lived for three months, when it suddenly died, the cause of its death not being known.

Besides the brother mentioned above, two others, Ernest and Burt, are reported as being subject to epilepsy. The former, seven years of age, had had at least three Grand Mal attacks, witnessed by his uncle, my informant. The last of these occurred about one year ago. The latter brother, now 11 years of age, is in the Cilbert Home in Winsted, Conn. He has had at least four attacks, all Grand Mal in type.

It may be of still further interest to note that the entire family show a common mark of asymmetry, viz.: the left eye being smaller than the right.

At birth of patient, mother was 25, father 35. Both were well, and had been during the preceding year. Birth was by normal labor, at full term.

During infancy patient developed somewhat slowly, "soft spot" closing at third year.

The patient strongly resembles mother in appearance and behavior. Her face is round, with fairly well-formed features. Her

hair is light; eyes blue. No marked asymmetry or deviations from the normal, with exception of the family deviation stated above.

Patient states that she has had spells since four years of age. Has frequently had status epilepticus. Her attacks are preceded by the epileptic cry, and are of the Grand Mal type. She always falls and bites her tongue. Attacks are generally caused by some indiscretion of diet, especially by overeating.

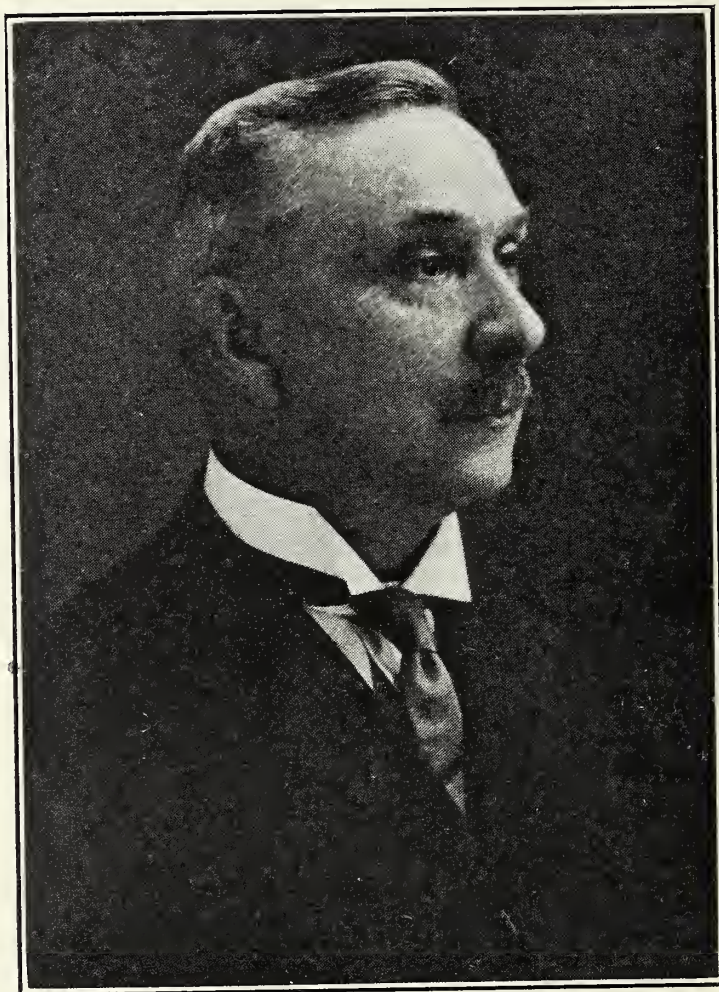
RÉSUMÉ.

1. Grandparents, if not insane, at least feeble-minded.
2. Parents below par mentally, especially mother.
3. Six children epileptic. One other said to have something the matter with head. Nature of disease unknown.
4. One child, although normal herself, had one child born extremely small and die of convulsions at six months of age.
5. One child with weak eyes conveyed this tendency to her two children, of which one, born blind, died at three months of age.
6. Asymmetry in size of eyes common to entire family.

F. W. GUILD, M.D.

DISEASES OF THE NOSE, MOUTH, PHARYNX AND LARYNX. A textbook for students and practitioners of medicine. By Dr. Alfred Bruck (Berlin). Edited and translated by F. W. Forbes Ross, M.D., Edin., F.R.C.S., England. Late Civil Surgeon His Britannic Majesty's Hospital, London; Assistant North London Hospital for Consumptives and Diseases of the Chest; Clinical Assistant Metropolitan Hospital for Diseases of the Nose and Throat, etc. Illustrated by 217 figures and diagrams in the text, many of which are in colors. New York: Rebman Company. Cloth, \$5 net. 1910.

This book meets admirably the requirements of the general practitioner and student. The salient feature of the volume is that it contains so much of real practical value in an exceedingly condensed space. The contents are divided in four parts—Diseases of the Nose, of the Mouth, of the Pharynx and of the Larynx. Each of these parts are further subdivided into a general section, dealing with the anatomy, physiology, methods of examination, routine of examination and general therapy, and a special section handling the various affections peculiar to the organ under consideration. The arrangement of the contents is ideal, and whilst the text is not overly fulsome, still is sufficiently so as to include what is necessary to the readers to whom it is addressed, namely, the general practitioner and student, neither of whom wish to be wearied with unnecessary and unessential detail. The illustrations are numerous, clear and instructive. We take great pleasure in putting our stamp of approval on this book, and feel confident that purchasers of it will not be disappointed.



FRANKLIN BUCHANAN SMITH, M.D.

The New President
of the
Medical and Chirurgical Faculty
of Maryland



- ¶ Born April 10, 1856, in Frederick, Md.
- ¶ Primary education at Frederick Academy, Frederick, Md.
- ¶ Collegiate education at Princeton College, from which he received the degree B.A., and three years later that of M.A.
- ¶ Medical education at the University of Pennsylvania, class of 1878.
- ¶ Health officer of Frederick, Md., 1886-1895.
- ¶ Vice-President Maryland State Board of Medical Examiners.
- ¶ President Frederick County Medical Society, 1900-1903.
- ¶ President Association of Surgeons of the Baltimore & Ohio Railroad, 1909.
- ¶ President Washington, Frederick and Gettysburg Railroad.
- ¶ Member of United States Pension Board for Frederick County for 10 years.
- ¶ Vice-President Medical and Chirurgical Faculty of Maryland, 1903-1904.
- ¶ President Medical and Chirurgical Faculty of Maryland, 1910-1911.

MARYLAND MEDICAL JOURNAL

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BALTIMORE, JUNE, 1910

WILLIAM HENRY WELCH.

THE election of Dr. William H. Welch to the presidency of the American Medical Association marks an epoch in the medical history of Maryland. It is particularly noteworthy that of the many eminent medical men of our State, Dr. Welch is the first upon whom this honor has been conferred by the physicians of this country. In our opinion the association has made a wise choice, and its activities and influence are certain of advancement under the stewardship of this remarkable and lovable man. The range of Dr. Welch's activities is marvelous. His capacity for work is wonderful. His influence as teacher, physician and public-spirited citizen has been far-reaching. As an index of his worth as a citizen may be cited the many public civic offices to which he has given his time, among them being presidency of the State Board of Health, membership in the School Board of Baltimore, the Sewerage Commission and the Charter Revision Committee of Baltimore.

As a maker of men Dr. Welch stands out conspicuously among the medical educators of America. To his training the medical profession of America is indebted for such men as Councilman, Opie, Abbott, McCallum, Bloodgood, Williams and Flexner.

DIETETICS SHOULD BE GIVEN MORE ATTENTION IN MEDICAL COURSES.

ALTHOUGH proper eating is the keystone to health, medical schools neglect dietetics entirely, or, at any event, teach but meagerly its fundamentals. There is, however, an awakening interest to the import of scientific feeding in health, and especially in disease, and the time is fast approaching when every medical institution will devote a reasonable length of time to this department of medicine. Think of the absurdity of turning loose on the public medical graduates without a single lecture on this important subject, and yet this is exactly what most of the medical colleges are doing. Amongst the first questions directed to a recent graduate is that of the quantity and quality of food to be administered. Isn't it just as unrea-

sonable to expect an embryo doctor to handle this question intelligently as to administer drugs rationally without ever having had a lecture or demonstration in materia medica or therapeutics. It goes without saying that a sick person demands proper diet, else recovery will be delayed, and in some instances even prevented. That improper dieting is at the bottom of a great many ills is a certainty, yet the interrelation between diet and disease and disease and diet have received but scant attention of our medical educators. Of what use is the qualitative examination of urine, if you do not know what food and what amount the patient is consuming? In diabetics it is now well understood that the tissues in some instances can and do oxidize a certain amount of the ingested carbohydrate diet, shows a tolerance for a given quantity of sugars. This being the case, it is the utmost foolishness to deny to the sufferer the amount of sugar for which he shows a tolerance. Still, how often have we heard of diabetics just because a little sugar is found in the urine to be placed on a sugar-free diet, which is an absolute punishment and injustice to the patient.

In many other conditions the above statement is just as pertinent, and it seems no more than justice to the student that he receive proper instruction in dietetics, which can only be accomplished by establishing chairs on dietetics in charge of dieteticians.

HOOKWORM WITHOUT SYMPTOMS.

It is a well-known phenomenon that virulent typhoid fever organisms may keep growing in the body many, many years after active symptoms have subsided. So, in hookworm disease Dock (*Interstate Medical Journal*, March, 1910) calls attention to the many and varied symptoms associated with this disease. In some cases there are no symptoms whatsoever, except the eggs in the stools, whilst in others there are great variations, intensity and interweaving of the symptoms.

It is the former class which is of the utmost importance to hygienists and sanitarians, as it supplies the unsuspected bacillis carrier. When we take into account the enormous number of healthy looking persons estimated to be infected in hookworm countries, from one-quarter to one-half of the population, and the findings of Dock himself that 30 per cent. of one of his classes were unsuspectingly infected, the enormity of the problem facing health officials in those sections looking toward the control and elimination of this malady looms up mountainous high.

Medical Items.

THE engagement of Miss Mary Dulany Lemmon to George Howard White, M. D., Johns Hopkins University Medical Department, '06, of Charleston, W. Va., is announced. The marriage will take place on June 1, and the couple will reside in Baltimore.

DR. RICHARD P. BELL, former resident physician at the Union Protestant Infirmary, will remove to Atlanta, Ga., where he will engage in the practice of surgery.

DR. H. BURTON STEVENSON, who has been a patient at the University Hospital, is reported improving.

DR. CHARLES W. STILES of the Rockefeller Sanitary Commission, in an address before the students of Goucher College, blamed the growth of hookworm disease to the unsanitary conditions which surround the negroes of the South.

DR. JOHN C. MORFIT of the class of '95 of the College of Physicians and Surgeons of Baltimore has been appointed commissioner of the new hospital system of St. Louis. He will assume charge of all hospitals, dispensaries and similar city institutions.

THE marriage of Miss Eliza Early Anderson of Rockville, Md., and John Hathaway Lindsey, M. D., University of Pennsylvania, '99, of Washington, D. C., will be solemnized on June 15. The couple will live at Washington Grove, Maryland.

DR. ROBERT HOFFMAN, 1325 Park avenue, Baltimore, will sail for Europe July 1, and will spend the summer in Berlin.

THE alumnae of the Johns Hopkins Hospital Training School for Nurses held their annual reunion on May 20. Nearly two hundred members attended. Plans were discussed for the placing of a painting of Mrs. Isabel Hampton Robb in the assembly room of the Nurses' Home, and it was announced that nearly the entire amount required had already been subscribed.

THE residence, 2900 North Calvert street, occupied by Dr. Melville H. Carter, suffered a damage of about \$250 by fire on the morning of May 9.

DR. LEWIS K. WOODWARD of Westminster has been appointed City Treasurer of that town.

DR. THOMAS McCRAE was operated on for appendicitis at the Johns Hopkins Hospital. The operation was performed by Dr. J. M. T. Finney. Dr. McCrae is much improved.

THE engagement of Miss Camilla Lucille Gordon to Dr. J. Page Strong, both of Baltimore, is announced.

THE alumni of the Johns Hopkins University Medical School held their first reunion May 6 and 7, at which meeting the members formed a temporary organization with a view to forming a permanent one three years hence. Dr. Thomas R. Brown of Baltimore was elected president; Dr. W. R. Steiner of Hartford, Conn., secretary and treasurer, and Drs. W. G. McClellan of New York, H. A. Christian of Boston, C. R. Bardeen of Madison, Wis., A. W. Hewlett of Ann Harbor, Mich., and Rufus Cole of New York, an executive committee, which is to frame a constitution and by-laws of the new organization.

DR. V. MILTON REICHARD of Fair Play, Washington County, Md., who has been seriously ill at his home with pleurisy, is reported as slightly improved.

MARRIAGES.

ARTHUR LOUIS FEHSENFELD, M. D., University of Maryland, '09, to Miss Viola M. Struven, both of Baltimore, May 18, 1910.

DEATHS.

SAMUEL PEACHY LATANE, University of Maryland, '97, was suddenly killed in an automobile accident, May 1, in Winchester, Va.

SAMUEL T. HAFFNER, M. D., College of Physicians and Surgeons, '74, at his home in Frederick, Md., May 6, of angina pectoris, aged 61 years.

JOHN W. HEBB, SR., University of Maryland, '60, at his home in West Friendship, Md., May 18, aged 71 years.

HENRY USTICK ONDERDONK, University of Maryland, '73, at his home in Buffalo, Wyoming, May 11, aged 60 years.

BENJAMIN R. DAVIDSON, M. D., University of Maryland, '67, at his home in Davidsonville, Md., May 1, of paralysis, aged 64 years.

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SHARP & DOHME

Editorial Comment.

A PLEA FOR HUMANITY.

THE people of the United States suffer a loss of over 600,000 lives per annum that might be prevented by reasonable safeguards under the co-operation of the Federal and State authorities. This is the bold statement of Senator Owen of Oklahoma when introducing a bill for the creation of a Department of Public Health to be presided over by a cabinet officer.

We need not reiterate the many arguments which have been made in our pages in favor of this great health movement. The time is propitious for the final effort. Let us as physicians individually write a letter to our two Senators and Congressman, urging them to give active support to the measure at all times, and especially when presented for consideration in either house. By so doing the profession will emphasize not only the opinion expressed by the scientific world, but proclaim their endorsement—as guardians of the public health—of the recommendations of both ex-President Roosevelt and President Taft. These men are not innocents, and have not been led to express their views by clamor or improper methods. Let us take care that the public, and especially our representatives in Congress, are properly advised or educated as to the necessity for this Federal and State safeguard against preventable disease. We commend the concluding words of Senator Owen's argument:

"Mr. President, I present this matter to the Senate with no pride of authorship, because I deserve no credit in that respect, and am perfectly willing to assist a bill drawn by any other Senator which shall accomplish the purposes which I have at heart.

"I realize that my colleagues are intensely preoccupied with the multitude of demands upon their time and attention.

"But this is a question of vast national importance. In eight years we have increased our expenditures over the average of preceding years by the huge sum of one thousand millions for the army and navy, and are spending 70 per cent. of the national income to cover the obligations of past wars and the preparation for possible future wars, or about seven hundred millions per annum. But for war on preventable disease now costing us infinite treasure in life, efficiency and commercial power and prestige we spend nothing, and do not even employ the agencies we have in an efficient manner.

"In the name of the people, and in the name of the American Medical Association, whose members are the faithful and self-sacrificing guardians of the health of our people, and in the name of the Committee of One Hundred of the American Federation of Labor, of the National Grange and of the various health boards of the 46 States of the Union, and of the great body of learned men desiring improved sanitation and the application of the improved agencies of preventing disease, disability and death, I pray the Senate to establish a department of public health.

"The principle of the bill meets the general approval of the public-health societies and of the medical associations of the United States, and there should be no difficulty in perfecting this bill and in impressing upon the country the importance of organized effort to control the ravages of tuberculosis, typhoid and malarial fevers, bubonic plague and other preventable diseases, which inflict such

Skill in Modern Pharmacy

Unguentum Resinol is a skillfully made and chemically pure Ointment. Its therapeutic properties are decidedly healing, nutrient and antiseptic. The consistence and pliability of this ointment commend it especially as an application of exceptional merit in all eruptions and irritations of the skin. It is prescribed daily by leading physicians throughout the world for

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It allays the itching of PRURITUS ANI instantaneously

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Resinol (medicated) Shaving Stick also contains the healing and antiseptic virtues that have made Resinol Ointment so famous. Its free, creamy lather soothes and prevents the irritation incident to shaving. It is a real luxury and comfort to self-shavers.

These Preparations Are for Sale in All Leading Drug Stores in Every Country of the World

I have used Resinol Ointment in Eczema and Impetigo of teething children and it has given entire satisfaction. I have also used Resinol Soap in Tinea Tonsurans and Tinea Declavans with excellent results, and I regard it as the best soap to use for all scalp troubles and to keep the hair in good condition.

F. P. LEWIS, M.D.,
East Birmingham, Ala

I find that the Resinol Ointment is especially beneficial and efficacious in eruptive and irritative skin diseases. Your Soap is also very good for shaving, as it keeps the skin soft and in a healthy condition.

DR. MIGUEL ABELARDO EGAS,
Quito, Ecuador.

I wish to state that I have used with marvelous success the Resinol Ointment in cases of Pruritus, Eczema and other skin affections. The results obtained have always been very satisfactory, and I am glad to say this for the benefit of others.

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THE ETIOLOGY OF CAISSON DISEASE.

THE great feats of engineering which have been successfully accomplished on the two sides of Manhattan Island during the past few years and have resulted in the construction of the various tunnels, which give promise of adding so much to the comfort of the inhabitants of this city and its suburbs, are the products not only of the mentality of great mechanical geniuses and the expenditure of vast sums of money, but of no inconsiderable amount of suffering and loss of life as well. The chief cause of this latter factor has been the frequency of caisson disease, which has resulted from the tremendous air pressure under which the workmen were obliged to labor while forcing the steel tube through the soft mud and rock of the river bottom, a pressure sufficiently high to counteract the weight of the mud and water lying above. This disease, known to the workmen as "bends" from the attitude assumed by the sufferers, an acutely agonizing affection, has been more or less prevalent wherever work has been carried on under increased atmospheric pressure. Probably in few instances, however, has the liability to it been so great as in the present piece of work, for in few construction problems have as many men been engaged for so long a time under such high pressure.

Many theories as to the etiology of caisson disease have been advanced. The generally accepted opinion that it is due to the concentration of the normal gases of the atmosphere in the tissues of the body by the increased external pressure and their sudden expansion due to undue rapidity in changing from high pressure to low, thus explaining the disease on a purely mechanical basis, has been questioned by various authorities, who have claimed that the disease is due less to the normal gases under pressure than to the absorption of certain abnormal gases, as carbon monoxide and dioxide, nitric oxide, marsh gas and sulphureted hydrogen, found in the tunnels by blasting, by decomposition and by the exhalations from the bodies of the workers. In an effort to settle this question, J. E. McWhorter, one of the surgeons to the constructors of the Pennsylvania Railroad East River tunnel, has made a new and careful study of the disease, not only by close observation of the cases which have come under his care during two and a half years' service, but also by carrying out of systematic analyses of the gases found in the tunnels at various times and under differing conditions. In his article upon the subject, which appears in the *American Journal of Medical Sciences* for March, 1910, he states that, whereas the usual conservative estimate of the amount of carbon dioxide which may safely be allowed in a tunnel is 0.1 per cent., as

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a result of several thousand analyses, he could show that at no single time did the maximum exceed this amount; that the minimum amount found was 0.045 per cent., and the average 0.07 per cent. Furthermore, a study of the daily fluctuation in the amount of this gas, as compared with the number of cases of "bends" reported, showed no relation whatever between the two conditions. A study of the carbon monoxide also showed that this gas never exceeded the comparatively safe amount of 0.045 per cent., and reached this limit only for a few minutes just following the discharge of a blast. A clinical analysis brought out the fact that the pressure and the number of workers being the same, the prevalence of "bends" did not vary in relation to the amount of blasting, and so could not be dependent upon the carbon monoxide content of the air. Methane was never found in the air of the tunnels, and nitric oxide and sulphureted hydrogen in only the most minute quantities. The ventilation in the tunnels was thoroughly adequate, between seven and eight thousand cubic feet of air passing through per man each hour.

The two most striking positive results of the present investigation were the finding at autopsy in a fatal case of "bends" that the right side of the heart was filled with gas, 80 per cent. of which consisted of nitrogen and 20 per cent. of carbon dioxide, and the relative great susceptibility of new and green men. In regard to the latter point, McWhorter shows that of green men who entered the tunnel, 15.5 per cent. had attacks of "bends"; of the new men who claimed to have worked under pressure before, 9.4 per cent. were affected, and of the old workers, but 0.43 per cent. The investigation is certainly of value in confirming the old theory that the disease is of a purely mechanical nature, due to the absorption of an excessive amount of nitrogen, and in pointing out the relative susceptibility of new men and the gradual acquiring of immunity to the unnatural conditions of life.—*Medical Record*.

Excerpts.

THE ABUSE OF HYPODERMIC STIMULATION DURING AND AFTER SURGICAL OPERATIONS.

HYPODERMIC stimulation during and after surgical operations is ordinarily governed by the habit of the anesthetist or surgeon more than by his deliberate judgment. It is also true that the anesthetists and surgeons who have had the largest experience and the best results use such stimulation rarely. The apparent necessity for stimulation will depend on the skill and dexterity of both the surgeon and the anesthetist. It will also depend on the anesthetic chosen, the environment in which the operation is performed, the previous condition of the patient and the care with which he may have been prepared for the operation.

Given a patient in fair physical condition, prepared for operation with due care, skillfully anesthetized and operated on without undue loss of time or loss of blood, by a fairly skillful surgeon, and hypodermic stimulation will, with a few rare exceptions, be quite unnecessary. More than this, if unnecessary, it is definitely injurious. So far as my observation and experience go, the great majority of the patients who are operated on in our hospitals need no hypodermic stimulation whatever during or after the operation,

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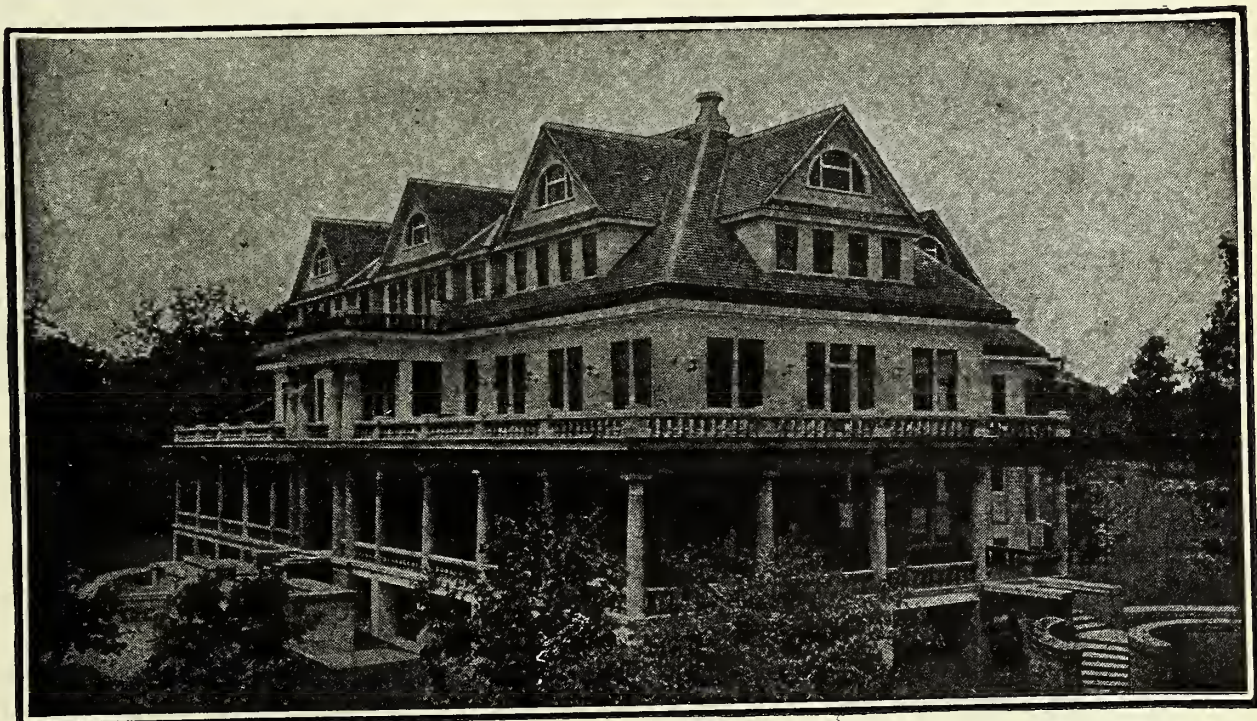
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and, furthermore, they are injured if such stimulation is given to them.

After the patient is returned to his bed, and as he recovers from the anesthetic, with the nausea, vomiting and pallor incident to its administration, his pulse softens and, not uncommonly, becomes very thin and small, and even intermittent. It is under these circumstances that the inexperienced nurse and the unthinking doctor rush for the "strych and the spart," and "shoot it into him." In reality, all that is needed is postural treatment, the external application of heat, and possibly water or salt solutions by the rectum or by the stomach, depending on the nature of the operation which may have been performed.

I cannot recall a single instance in which I believe that a patient has ultimately recovered as a result of the use of such hypodermic stimulation.

No strychnine, no spartein, no digitalin, no nitroglycerine—no whip and spur for a tired and jaded and played-out or overworked heart, if such he has—no piling up of new poisons to impose additional burdens on the organs of elimination. Let him alone. Keep him warm and very quiet. Give him all the water he can absorb by the avenue of choice—mouth, rectum, under the skin, or within the peritoneal cavity—and as few drugs as possible. "His apparently feeble heart's action is often occasioned by the retention of a large volume of blood in the enormous veins of his thoracic and abdominal organs."¹

In the treatment of shock Crile's therapy is founded on this hypothesis of vasomotor exhaustion. The drugs commonly used are not only inactive, but are positively harmful in most instances.

"Digitalis: The heart is not depressed or weakened in any way, and a cardiac stimulant is not indicated.

"Nitroglycerine, alcohol: These drugs, by dilating the peripheral vessels, further lower the blood-pressure and hasten death.

"Strychnine: This drug apparently acts in customary doses only on the sensory neurons of the cord, and thereby heightens reflex irritability. This action is not stimulation. Under normal conditions strychnine may raise the pressure by facilitating the access of normal afferent impulses from the periphery. This action, in the presence of suitable factors, *obviously conduces to shock*; it is precisely antagonistic to the blocking action of cocaine, and, indeed, Crile found that of deeply-shocked animals, those receiving strychnine died more rapidly than the untreated controls; or, if they survived, convalescence was much more prolonged.

"Atropin, given before the experiments, was found slightly to lessen the tendency to shock."²

By such methods as these, based on such reasoning and experimental proof, the greatest surgeons of the century are securing the best results and the lowest mortality ever recorded in surgical literature. "The more they know, the less they do."

If compelled to choose, be guilty of a sin of omission rather than a sin of commission. Give up acting for the sake of action in emergencies. Keeping a cool, calculating, thoughtful poise, order only those remedies and measures which reason and wisdom teach us may benefit and not injure the patient. Add nothing to his bur-

¹Wetherill: The Conservative Agency of Shock, *West. Med. Rev.*, March, 1898.

²Smith, H. W.: Surgical Shock; A Review of Recent Literature, *U. S. Naval Med. Bull.*, October, 1909.

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MAN'S BELT—FRONT VIEW

den by doubtful dosing with deadly drugs.—*H. G. Wetherill, M.D., The Journal of the American Medical Association.*

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Fourth—Its stimulation of the pity and generosity of the rich has resulted in hitherto unheard-of benefactions for the study and cure of the diseases that affect mankind, benefactions that will continue to improve human life long after tuberculosis shall have been banished.

Fifth—It has established bonds of fraternity between the enthusiastic crusaders of all classes and all races and all countries, bonds that make for racial understanding and international goodwill.

These accomplishments, made possible only by great effort and sacrifice on the part of individuals and communities, are worthy ones, worth all that they cost; but are they as great as they ought to be at this stage of the battle?—*Stephen J. Maher, M.D., Medical Record.*

Correspondence.

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THE MENTAL CHARACTERISTICS OF CHRONIC EPILEPSY.*

By Ernest Jones, M. D., M. R. C. P. (London.)

Demonstrator of Medicine and of Psychiatry, University of Toronto; Clinical Director of the Ontario (Government) Clinic for Nervous and Mental Diseases.

THE customary concentration of attention on the more sensational aspects of epilepsy, namely, the fits, has, by furnishing a narrow conception of it, done much to retard our knowledge of the disease as a whole. Observation of the mental and physical characters present in the inter-paroxysmal periods is of especial importance in at least two directions. In the first place, it affords a more secure basis for accurate diagnosis than does consideration of the fits alone, for it is now definitely known that every single feature that used to be thought pathognomonic of an epileptic fit may also occur, though less frequently, in a hysterical one.¹ As I have elsewhere stated,² it is often possible to exclude epilepsy by observation of a given fit, but it is scarcely ever possible to exclude hysteria in this way, and many authorities refuse to make the diagnosis of epilepsy unless they have determined the presence of the characteristic mental changes during an inter-paroxysmal period.³ In the second place, observations made during this period are beginning to yield more fruitful conceptions of the nature and origin of the disease than consideration of the fits alone has been able to do.

It would be impossible here to review the extensive knowledge that has of late years been acquired concerning the mental state of epileptics, and I shall merely recall some of the chief characteristics of this, and try to point out how some valuable generalisations are beginning to be made in this direction. The main features of the mental state in chronic epilepsy, all of which are naturally more pronounced in advanced cases of the disease, may be summarised as follows: Perhaps the most important, practically, is the gradual reduction of intellectual capacity, which may progress to feeble-mindedness or even to profound dementia. Early evidences of this are the tardiness of general psychical reactions,

*Read before the National Association for the Study of Epilepsy, Baltimore, May 7, 1910.

a certain heaviness in thinking, a difficulty in seizing new ideas, a slowness in following the thoughts of others—which frequently leads to serious misunderstandings—and a resulting conservative adherence to established and rigid opinions. With it goes a poverty and restriction of ideas, a limited and stereotyped vocabulary, and a gradual narrowing of the field of interest. This narrowing differs from that of most dementing processes, particularly from that of dementia praecox, in being a concentric one, the patient becoming more and more confined to the interests and knowledge of his immediate environment. The memory commonly suffers, and there are four distinctive features about the resulting amnesia: First, it is much greater in extent than the degree of the general intellectual impairment would lead one to expect. Secondly, matters of distant interest are forgotten more than personal ones, so that the patient may retain a detailed memory for unimportant occurrences in his own life at a time when he cannot answer the simplest question of general knowledge; thus the field of memory, like that of interest, is concentrically retracted. Thirdly, there is little or no tendency to fill in gaps in the memory by means of confabulation, such as is so frequent in Korsakow's psychosis and other conditions. Fourthly, it is much easier to cure the amnesia by getting the patient to recall the forgotten occurrences during hypnosis, a matter that has perhaps been most fully investigated by Riklin.⁴ As I have elsewhere pointed out,⁵ it is probable that all amnesias are due to defects in reproduction rather than in conservation, so that, theoretically at least, it is always possible that any given forgotten memory might be recalled. However, in practice one knows that some amnesias, e. g. hysterical ones, yield to treatment much more readily than others; the amnesias of epilepsy differ from those of the other psychoses in being relatively amenable.

In his relation with surrounding persons the epileptic shows the following characteristics: He is slow in grasping an idea presented to him, but having once done so he is equally slow in passing on to the next; he remains with his attention fastened on it, and pedantically elaborates the thought to an extent out of proportion to its true significance. He describes it in a minutely circumstantial way that is often wearisome to his audience, sparing no detail; in his speech he makes use of stilted expressions and hackneyed phrases, which form a striking contrast to the actual poverty and limitations of his vocabulary. His *rapport* with the physician and others about him curiously alternates. At one period he may show the taciturnity and withdrawal into himself that we are accustomed to associate with different types of dementia praecox, while at another an expansive mood and an accessible or even overfriendly attitude may accompany an active desire for company that is at times the source of much embarrassment. This periodic alternation of behaviour and mood is one reason why on the mental side the resemblance of epilepsy to manic-depressive insanity is sometimes extremely striking. In

both of these periods irritability and quick-temperedness may be very prominent, and the well known outbursts of rage are always liable to be evoked on the slightest pretext.

The conduct and character of a chronic epileptic have a number of traits that together make up a distinctive clinical picture. The constant impulse to be busily engaged, on even trivial affairs, is marked by an exaggerated sense of importance that the patients attach to all their doings. This latter feature is part of a highly characteristic general trait, namely, the egocentric nature of the patients' mental processes. This frequently is exceedingly pronounced, so that the whole of the patient's thoughts and interests centre about his own personality, and naturally it may extend until it causes grave distortion in the patient's conception of his environment. It may, for instance, lead to external, indifferent occurrences being wrongly interpreted by the patient, who may thus develop delusions of persecution or injury. The personal vanity that such patients frequently manifest in a high degree is also a part of the same general trait; the vanity is usually more developed in regard to the body itself than to mental capacities, giving rise, on the one hand, to a fondness for dress, uniforms, decorations, etc., and on the other, to an abnormal preoccupation with the state of the body, particularly as regards health. The excessive significance that the patients attach to the affairs of their own family is also a consequence of this egocentric trait, and of the general narrowing of their interests to purely personal matters. Other characteristics, particularly those of an infantile nature, will presently be referred to in another connection.

Much work, the best of which is that of Jung's,⁶ has been done on the association reactions of epileptics, with the object of establishing the precise nature of the more distinctive features of their mental state. It is found that the reactions in many respects resemble those of imbeciles, notably in the general delay in the reaction-time of the responses, the frequent repetition of the stimulus word, the high percentage of intrinsic associations, particularly those of the defining type, and the tendency to give answers in the form of sentences. There are, however, certain positive differences, which in a considerable number of cases enable one to make a definite diagnosis of epilepsy from a study of the association reactions alone. The intrinsic associations are peculiarly concrete, and consist of explanations and definitions of a clumsy and often minutely detailed nature; very characteristic is the tendency to supplement the response by adding a phrase that is meant to confirm or complete it. The sentences used are often built in a conventional way, as if taken from a school primer. Extrinsic associations are relatively rare, especially motor-speech ones; they are, however, not restricted and stereotyped, as in the case of imbecility, with the exception of those having an egocentric quality. There is a great tendency to monotony in the form of the response; thus, a given part of speech, such as adjectives, may be adhered to throughout, or substantives may be always stated in

the plural, and so on. Allied to this is the obvious poverty of vocabulary, which is sometimes very striking. Indications of a rich affective mental life are frequent, in contradistinction to imbecility; therefore great delays in the reaction-time with certain stimulus words, or total failure to respond, (complex-indicators) are very frequent. A peculiarity here is the fact that the evidence of a strongly feeling-toned process sets in later and lasts longer than in other conditions; this is shown by the delay in the reaction-time occurring not at the critical test word, but at the succeeding one, and by the perseverating effect for two or three words later.

In the preceding account of the mental state no mention has been made of occurrences that are of great importance, both to the individual patient and to society, namely, the sexual activities of epileptics. It is notorious that these are often of a turbulent or even violent nature, and, further, that perverse acts of different kinds are especially common; in fact, there is a popular tendency to think of the presence of epilepsy as being a probable explanation whenever any unusually shocking or bizarre sexual crime has been committed. A great deal has been published on this subject, most of which, however, is of purely descriptive or casuistic interest; as a rule the instances have been considered as isolated occurrences, and almost as being only accessory features of the malady. It is only recently that an attempt has been made, notably in a recent striking paper by Maeder,⁷ to review these various activities and to correlate them with the other abnormal processes. This line of investigation certainly deserves to be more closely pursued than has up till now been the case, for the following two reasons: In the first place, as will presently be indicated, a knowledge and understanding of these sexual activities, which are usually ignored, gives us in many cases a deeper insight into the meaning of various symptoms that at first sight seem not to be connected with the sexual functions. In the second place, since Freud's valuable researches our conception of the significance that errors in sexual development have for the pathogenesis of the psycho-neuroses and many of the psychoses has been radically widened. Freud has been able to show that all psycho-neuroses are due to errors in the development of the sexual instinct, and, since Jung's investigations on similar lines, it has become highly probable that the large group of the psychoses included under the term *dementia praecox* emanates from the same source. It has, indeed, been found possible to formulate the essential characteristics of these disorders in terms of abnormal sexual functioning, and the question at once arises whether it might not be possible to do so in the case of epilepsy. Two considerations make this attempt less hopeless than might at first sight appear, namely, the facts that, on the one hand, the sexual side of epilepsy is undeniably a prominent one, while, on the other, the actual pathogenesis of the malady, apart from certain organic cases which are plainly to be separated, is wrapped in profound obscurity.

The most important conclusions that Maeder arrives at, after

an extensive study of the facts, are these: The sexual desires of epileptics are stronger and more imperious than those of the normal; whether from a primary excess, a lesser inhibition, or, more probably, from both is not definitely known. They consequently tend to overflow the normal channels of outlet, and are manifested not only in the normal manner, but in all kinds of perverse activities; there is no kind of perversion that may not commonly be met with in epilepsy. In this latter respect the sexual activities resemble those of normal young children. Freud has shown⁸ that the sexual life of young children differs from that of adults in several respects, notably in the fact that the sources of pleasure are with them much more diverse; the infant manifests the potentiality for all kinds of sexual perversions, and on this account Freud describes its sexual life as *polymorph pervers*. In epilepsy these normal potentialities are not suppressed, as they usually are, but come to direct expression in the shape of actual perversions. Maeder therefore describes the sexual life of epileptics as "polyvalent," borrowing an analogy from chemistry. It further resembles that of the normal child in being predominantly auto-erotic. This is shown not only in the extraordinarily large part played by masturbation and other auto-erotic activities throughout the malady—these have a close relation to pre- and post-paroxysmal periods and may frequently occur in crises as equivalents for the attack—but still more strikingly in the late stages. When intellectual impairment has advanced to a degree that in other dementing processes, e. g., general paralysis, still allows of allo-erotic manifestations, normal love, rape, and so on, the sexual life of epileptics has become almost exclusively of an auto-erotic type. A difference is here seen between hysteria and epilepsy; in hysteria the symptoms are all disguised expressions of various sexual activities, particularly the "perverse" ones characteristic of normal children, but in epilepsy these forms are greatly exaggerated and less disguised, while the auto-erotic element is even more pronounced. Stating these conclusions in their most general form, we may say that the sexual activities of epileptics retain the manifold variety met with in normal children, but differ from those of children in that the potential quality of these have become replaced by fully developed modes of expression.

We may now cite a few instances to illustrate how much more intelligible certain of the mental features indicated above become when they are correlated with various sexual processes. The most prominent stigma of the epileptic character is its markedly infantile nature, and this fact appears in a new light when we recognise its dependence on the infantile nature in epilepsy of the most fundamental of all psychical activities, namely, the sexual life. The stigma in question is revealed in a great number of traits. The busyness and the sense of importance they attach to their minor actions, the craving for recognition and praise, the desire to be rewarded for creditable behaviour of a trifling kind, the delight in dress and decoration, the peevish capriciousness and pettiness, the

fondness for spying on their comrades, the importance they attribute to their birthdays, the excessive delight in receiving presents, the simplistic piety of their family relations, and, above all, the markedly egocentric nature of their interests and conduct, are all typical instances of this. I would also attribute their conservatism and slowness in acquiring new affective states and ideas, or in surrendering old ones, to the exaggerated difficulty with which they renounce infantile sexual tendencies. The characteristic vanity already spoken of above is a mild form of the most exquisitely auto-erotic manifestation, namely, that technically known as "narcissism," and in some cases may even pass over into this. To be correlated with this psycho-sexual infantilism is the well known fact that epilepsy is essentially a disease of youth; in at least four-fifths of the cases the attacks begin before the age of twenty.

In the infant sexual interests are not so localised anatomically as they are in the adult, but extend to other regions, particularly to the alimentary orifices. These accessory interests are commonly over-accentuated in epileptics, a fact that accounts for a number of symptoms. Their excessive fondness for kissing is due to the unusual significance attaching to the labial mucous membrane, as probably is the curious symptom known as bulimia, attacks of craving for food. Similarly their morbid concern for the intestinal functions and for the dejecta, the so-called "stool-hypochondria," is due to an excessive sexual importance of the anal mucous membrane; they have not been weaned from the normal interest taken by infants in excretory functions. Various fetichisms also arise from this extension of sexual interest to other parts of the body. The excessive psychical significance acquired by the hands is due partly to this, and partly to their association with the act of masturbation; patients will sometimes be unable to answer a question concerning their health until they have consulted the appearance of their hands. Constant hand-rubbing is extremely frequent with epileptics, and is almost always a means of obtaining auto-erotic gratification.

The variations of mood in epilepsy are closely connected with the form of sexual activity. The periods of self-absorption, reserve, and taciturnity correspond with predominance of auto-erotic interests, and those of expansiveness with allo-erotic. In the twilight-states are developed half-conscious phantasies, in which sexual wishes come to imaginary fulfilment. The irritability and mental hyperæsthesia of epileptics may be correlated with the same symptoms in the anxiety-neurosis, and, like these, are due to undischarged sexual tension.

Of the perverse forms of allo-erotic activity three may briefly be mentioned. The passion for touching, smoothing, and stroking all possible objects, but especially the skin of another person, is an over-development of one of the normal preliminary sexual acts, and recalls the eighteenth century definition of the French encyclopaedists: "*L'amour est le contact de deux épidermes.*" Many epileptics behave unusually in shaking hands, retaining the hand

of the other person as long as possible, and even lifting it to their heart, their cheeks or their lips. The tendency to exhibitionism, i. e., display of covered parts of the body, particularly the genital organs, is very common in epilepsy. During minor attacks, or in states of partial obnubilation, a patient will frequently so adjust his position or clothing as to expose a part of the body, and when medically examining advanced cases it is usually easier to get a view of the abdomen than of the tongue. This strikingly contrasts with the behaviour of hysterics, who typically are noticeably modest even in attacks when consciousness is profoundly affected, and it may be made use of as a diagnostic sign of considerable value. The tendency to undress partially that is so frequently seen just after an attack of major or minor epilepsy is also of exhibitionistic origin, though many writers, e. g., Gallus,⁹ have naively attributed it to the need to go to bed induced by the feeling of sickness. Algolagnia, or association of lust and pain, is one of the best known aberrant sexual tendencies of epileptics. The sadistic component of this, namely, the obtaining gratification by the infliction of pain, is responsible for a great many lust murders, and other acts of cruelty and violence. The masochistic component, namely, the obtaining gratification by suffering pain, is in its slighter degrees very frequent. The sentimental mawkishness, the dependence, and the tendency to self-subjection present in so many epileptics are instances of this. In this connection may also be mentioned the fanatical, extravagant and pathological religiosity that is as characteristic of epilepsy as delusions of jealousy are of alcoholic "paranoia," or delusions of grandeur of general paralysis. Gallus¹⁰ states that this is due, not to the intellectual deterioration, as is commonly supposed, but to the morbid tendency to dependence. In the light of modern knowledge one may now go beyond this, and affirm that both arise from a common source, namely, the feminine, or masochistic, component of the sexual instinct.

In conclusion, it may be repeated that observation of the mental state during an inter-paroxysmal period is of high importance for establishing the diagnosis of epilepsy, and, further, that investigation of the deeper sources of the mental abnormalities is likely to prove of great value in enabling us more hopefully to penetrate into the nature of epileptic disturbances.

¹Hoche: "Die Differentialdiagnose zwischen Epilepsie und Hysterie," 1902, S. 18.

²Ernest Jones: "The Mechanism of a Briquet Attack as Distinguished from that of Psychasthenic Fits," *Journal of Abnormal Psychology*, December, 1907, p. 220.

³Heilbronner: "Ueber kleine gehäufte Anfälle," *Deutsche Zeitschr. f. Nervenheilk.*, Bd. XXXI, S. 472.

⁴Riklin: "Hebung epileptischen Amnesien durch Hypnose," *Journal f. Psychol. u. Neurol.*, Bd. I, S. 200.

⁵Ernest Jones: "Remarks on a Case of Complete Auto-Psychic Amnesia," *Journal of Abnormal Psychology*, August, 1909, p. 234.

⁶Jung: "Analyse der Assoziationen eines Epileptikers," *Journal f. Psychol. u. Neur.*, Bd. V, S. 73; "Diagnostische Assoziationsstudien," 1906.

⁷A. Maeder: "Sexualität und Epilepsie," *Jahrbuch f. Psychoanalytische u. Psychopathologische Forschungen*, 1910, Bd. I, S. 119.

⁸Freud: "Drei Abhandlungen zur Sexualtheorie," 2e Aufl., 1910.

⁹Gallus: "Der Geisteszustand der Epileptischen," *Volkmann's Sammlung*, Nr. 536-7, S. 829.

¹⁰*Ibid.* Op. cit., S. 817.

LACTIC BACILLUS PLANTING.

By A. K. Bond, M. D.,

Baltimore.

THE increasing use by the public of preparations of milk soured by the Bulgarian bacillus makes it necessary that physicians should have a clear view of its character and therapeutic claims; and as the literature of the subject is sparsely scattered among many journals in several languages, it is proper that a brief sketch of the innovation should be offered in the medical exchange of Maryland. I have *not* attempted to survey the whole of the said literature, except as far as was necessary to a fair understanding of the subject. There are many details concerning the agent and its therapeutics which have as yet not been worked out.

The Bulgarian bacillus (which has received various names from different workers) is one of the myriad varieties of germs which are capable of producing lactic acid fermentation in fresh milk. Several of these varieties are found in each dairy region; not as inhabitants of the udder milk, but as accidental infections from the environment of the milk pail. The varieties in neighboring regions may not be identical; so that when we take a view of the whole world, it is evident that the possible varieties are beyond estimation. In Oriental lands, where soured milk of camel, goat, ewe, mare, as well as cow, have been favorite foods and beverages since prehistoric times, a great number of brands of the article must have been hit upon and elaborated as specialties of different tribes and families. Some of these are still sold in Oriental markets under the names of lebban, kumyss and kefir.

Lebban, possibly lineal descendant of the "butter" which Abraham set before his mysterious guests, is said by some modern travelers to be of most delicious tartness as eaten with a spoon from the "lordly dish" of the Arab host. Kumyss, originally made of the milk of mares by the Scythians of Herodotus and their Tartar descendants, is an effervescent beverage, slightly tart, and sometimes slightly exhilarating from a small percentage of alcohol. Kefir (a Turkish derivative indicating delight) is fermented by hard pea-sized yellowish "kefir grains," containing several varieties of yeast and bacteria. Made without scientific precautions, these preparations of milk are necessarily impure, being infected by the local flora, lactic acid and otherwise, of each locality.

In the markets of European Turkey there is sold a preparation of somewhat uncertain relation to those already described, known in Turkish speech as gelee, and in Bulgarian as joghurt—pronounced jaurd. It is tart like the others described, but not effervescent.

This preparation, whether from the reputation which certain Bulgarians fond of it have gained for longevity, or in the natural

course of scientific inquisitiveness, has been of late years subjected to very searching study in many laboratories of Switzerland and Germany, and at the Pasteur Institute of Paris under Professor Metschnikoff. It has been found to contain a most vigorous lactic acid forming bacillus, now commonly known (in honor of its origin and of the pioneer work of the Bulgarian physician, Dr. Grigoroff, in bringing joghurt to the attention of scientists) as the Bulgarian bacillus. It is associated usually with a diplococcus and a harmless streptococcus (with which we have nothing to do at present). Whether the *Bacillus Bulgaricus* is found in all samples of gelee, or is a local infection of certain regions of Bulgaria, does not appear in the records.

This Bulgarian bacillus claims the attention of medical science by the possession of a faculty which is shared, apparently, by no other lactic acid former—that it can live for weeks in the human digestive canal, particularly the large bowel, and can thrive there on sugars and other foods so vigorously that it crowds out or kills out in selected patients certain putrefactive organisms that have been poisoning the body. It has been determined clinically that under ingestion of this bacillus both the feces and the urine show a lessening in the amount which they previously contained of harmful putrefactive products. The bacillus and its own products are, as far as known, entirely harmless. Its ingestion has no definite influence on stomach digestion.

The bacillus has been put on the market throughout the world under various trade names and in various preparations. Soon, probably, every enterprising milk firm will be selling these; in degrees of purity, doubtless that will demand State supervision, as contaminations may produce actual injury to unsuspecting buyers.

The bacillus is sold dry as a powder, or a tablet, to be swallowed or used in home manufacture. It is sold also in liquid milk preparations and in the form of bouillon. Some of these preparations contain the mixed germs of joghurt; some contain a pure culture of *Bacillus Bulgaricus*. It is, however, admitted by some most reliable makers that the presence of a certain companion germ gives a more palatable milk product. The main thing is that whatever germs are in it shall be identified and known to be harmless. The product of unknown germs is to be shunned, because under accidental conditions—as of long delay in the upper digestive tract—they may possibly poison the patient. A preparation that has a uniform taste at all times is to be preferred to one that varies decidedly from day to day.

The milk preparations have a peculiar acid taste, very agreeable to some adults and children (even infants), and agree excellently with many stomachs, even when very irritable. Inability to “take acids” does not contraindicate this special acid drink. Even among the Arab tribes, where it is the main reliance for food and drink, there are individuals who cannot take soured milk.

The acidity of Bulgarian milk increases with time, but it can

be shipped to points several hours distant from the city. It is taken by the tumblerful morning and night, costing thus about fifteen cents a day. The tablets or chocolates cost two or three cents apiece. The bacillus should be taken for years in chronic cases, as there may be an underlying proneness to putrefactive infection; but the planting may be intermitted occasionally, as the bacillus continues to grow for several weeks without reinforcement in well-planted intestines.

The writer in January, while ill under the care of Dr. Hemmeter, obtained very positive benefit from a milk preparation of the bacillus. As to the comparative value of the dry forms observers differ. It seems to be agreed that the tablets will do the planting in favorable cases; but that the more abundant culture in milk is ordinarily preferable. The daily addition of a tablespoonful of honey to the diet favors the action of the bacillus; and stomachs well-planted bear well this and other forms of sugar, though previously they found sugars indigestible.

The indications for the planting are still obscure. It may be tried in all cases of subacute and chronic illness, constipative or diarrheal, which may possibly be based on some form of putrefaction of the bowel contents. To some patients it brings relief from flatulence and constipation, so that, with the addition of simpler precautions, such as massage, chronic purgative habits can be broken up. Sometimes it quiets bowel action. In an already full diet the Bulgarian milk should replace some other article of food.

The future of this therapeutic agent may be already forecast. Many patients will medicate themselves with it in an aimless way and drop it as useless. Physicians will prescribe it for patients, who will take it in a desultory way, without proper supervision, gaining no permanent benefit. Elderly people will take it as a preventive of old age, and die in spite of their confidence in it. As a fad it will soon be dropped. Yet an agent of such possibilities for good will probably receive fair trial at the hands of a few careful physicians, and win here and there a triumph, even in patients who have despaired of health.

Like all dietary methods, it requires careful choice of cases, wise supervision by a doctor, and a determination on the part of the patient to get all the good it can offer.

The field opened for therapeutic effort is a wide one. The substitution of benign germs for injurious ones admits of great digressions along new lines of treatment for diseased surfaces, respiratory, cutaneous, etc. There is no *a priori* reason why subacute and chronic disease infections of these surfaces should not be starved out or more directly destroyed by vigorous benign implantations. This would be at least safer than efforts hitherto made to replace one form of disease infection, as in erysipelas implantations, by another somewhat less deadly.

ORAL HYGIENE IN RELATION TO TUBERCULOSIS.

By Bessie Burns Bennett, D.D.S.,

Baltimore, Md.

IN the State of Maryland there are three prominent sanatoria for the treatment of tuberculosis—the State Sanatorium, Eudowood, and the Jewish Home for Consumptives. All these have been built and equipped at enormous cost. The State Sanatorium was erected at a cost of \$185,000, and draws \$60,000 annually for maintenance; Eudowood receives \$15,000 state appropriation, and the Jewish Home \$3500. All this comes directly from the State Treasury, and much more is received from charity. This is the condition of affairs in most of the states, and it matters not whether the support of the institution comes by state appropriation or charitable gifts, it all touches the individual purse.

The tuberculosis sanatoria are not the only institutions in the states that the public support to combat this disease, for at the orthopedic hospitals a large per cent. of the cases are of tubercular origin.

It would not be far wrong to say that if the states would give their school children proper dental supervision, much of this tubercular tendency would be overcome.

It may seem a far cry between tuberculosis and the condition of the teeth, but let us see if we cannot establish a connection.

In a mouth which is in an ordinarily hygienic condition the secretions are alkaline, slightly so; in a mouth in which caries reigns these secretions are decidedly acid, and this acid medium is fraught with tartar accumulations, disintegrating tooth structure, abscess discharges and food debris, all fairly teeming with bacteria. As these acid vitiated secretions flow back into the pharynx and lodge there, the delicate membranes become irritated; they try to defend themselves from this unpleasant exudation and build up a barrier, as it were, which we know under the name of adenoids, from which affection probably 75 per cent. of school children suffer (the cause not always being an unclean mouth). These adenoids are responsible for many ills. They close the Eustachian tube, and cut off the supply of air to the middle ear, causing deafness, which will become permanent if unchecked; they encroach upon the larynx and cause a peculiar tension of the voice; they irritate the tissues and cause an annoying catarrhal affection, and what is more pertinent to our subject, they bar the passage from the nose to the throat, compelling the child to breathe through his mouth, and by constant irritation they keep the nose and throat membranes so inflamed that the child takes cold at the slightest change of temperature.

Now, Nature has arranged that when the individual breathes through the natural passage, the nose, the air is warmed between

the time it enters the nasal tract and the time it passes to the lungs. Spongy bones at the base of the nose act as filters, and furthermore, by a properly-performed act of respiration every muscle of the nose and chest is brought into play.

When the child becomes a mouth breather this natural order of things is changed. The air passes directly through the mouth unwarmed, unfiltered, carrying with it whatever impurities happen to be in the atmosphere.

In a breath taken through the mouth a much smaller quantity of air is inhaled, so the muscles of the lungs are not exercised fully, and the nasal muscles not at all. The law of Nature is similar to John Smith's law for our forefathers, "No work, no support," for she allows no idle tissue, and since the nose is not used at all, the nasal tissues atrophy and the passages become so small, that after the mouth breathing has been corrected, and the causes removed, the patient must take special exercises and develop his proper breathing apparatus. Indeed, if the mouth breathing has occurred during the period of the child's growth and persisted in for any length of time, the nasal passages will have become so deteriorated that they never will reach what, under favorable conditions, would have been their highest development.

The lungs, too, needing only part of their energy for the diminished supply of air sent them, shrink in size, become irritated by the impurities entering them in the air supply; some special irritation causes a spot to form; the irritation progresses, inflammation ensues, the spot becomes larger, the surrounding tissue is broken down, pus is formed, and we have what is known as a lesion of the lung, or a "tubercle," the beginning of the disease which is the scourge of the world—tuberculosis!

As we have said, the child suffering from adenoids is extremely susceptible to colds. A heavy cold means an unusual strain on the delicate, diseased lungs, and I can recall at least one case in which it meant death.

Everything in the body, under the conditions enumerated, seems in league to aid the dread reaper, for the blood, which should be supplied with good rich oxygen, is especially lacking in that commodity, as we have already shown that the air taken into the lungs has decreased many times in volume and is not pure.

Another cause plotting against the life of the child is the fact that his neglected mouth prevents him from masticating his food as he should. The stomach, unable to do its own work and that of the teeth, too, shows the strain in the poor blood, which poor blood, improperly oxygenated, must supply the needs of the body, and combat disease as well.

Which is cheaper, to sacrifice many lives yearly, to pay immense sums of money in tax and charity for the support of institutions for the treatment of tuberculosis, or pay fixed salaries each year to dental inspectors, who will work in the schools side by side with the medical inspectors, teach the children the value of their teeth, their proper use and care, and so by preventive measures do away

with a large percentage of this tuberculosis, which seems to be the curse of the present generation? "An ounce of prevention is worth a pound of cure." If the child is taught the evils which an unclean mouth will bring him to, he will protect himself by prophylaxis; he will aid us by looking after the next generation himself, and the good work will go on and on, and the good result be evidenced in the lessening of the death rate shown in medical statistics, for it is a fact, proved by actual experiment, that in all countries which see that the school children's mouths and teeth are attended to, there is a marked falling off in disease among them, and the child, enabled to use his energies to their full power, develops a good mind in a good body, and so makes the better citizen.

SIR JAMES YOUNG SIMPSON.

(1811-1870.)

FIFTEENTH OF A SERIES OF ESSAYS ON THE HISTORY
OF MEDICINE FROM THE EARLIEST TIMES.

By H. M. Cohen, M.D.

CHAPTER XV.

SIR JAMES Y. SIMPSON enriched the world by the discovery of the anæsthetic action of chloroform and is remembered principally in this connection, although his services toward the advancement of obstetrics were by no means meager.

The earliest hint as to anæsthesia is found in the Bible. In Genesis, ii, we learn that "the Lord God caused a deep sleep to fall upon Adam; and he slept; and He took one of his ribs, and closed up the flesh instead thereof." Homer vaguely speaks of the sleep-producing effects of nepenthe. Herodotus tells how the Scythians caused intoxication by inhaling the vapors of hemp. Dioscorides and Pliny mention the anæsthetic properties of mandragora. Hemp, as a narcotic, was even known to the Chinese as early as the third century, and Shakespeare makes frequent mention of the soporific effect of mandrake.

In 1800 Sir Humphrey Davy discovered the pain-relieving properties of nitrous oxide gas, but only threw out a suggestion as to its anæsthetic quality. Eighteen years later Faraday noted the fact that inhalations of sulphuric ether produced the same effect as nitrous oxide gas. This was repeated by the Americans—Godman, Jackson, Wood and Bache—during the following sixteen years.

In 1844 Dr. Horace Wells, a Hartford (Conn.) dentist, demonstrated that it was possible to extract teeth during the in-

sensibility caused by nitrous oxide gas. Unfortunately he abandoned the experiments, owing to an unfavorable experience; and in 1846 Dr. Morton, a Boston dentist, found it possible to extract teeth under the anæsthesia produced by inhalations of the vapor of sulphuric ether. Its great value was soon manifest, and numerous surgical operations under its influence fixed it as a thoroughly reliable agent.

The following year Sir James Simpson announced his discovery of the anæsthetic effects of chloroform. The value of ether and chloroform to the world has long since been acknowledged and they have been accepted as matters of fact.

We, in this enlightened generation, can hardly appreciate the great advances in surgery these agents have made possible. Without them many of our most intricate and difficult operations would have been unknown; and, as for their beneficent therapeutic action, it is no doubt true that they have wiped out more pain and suffering than all other medical agents combined.

It does not require a great stretch of the imagination to picture the tortures of an operation before the days of anæsthesia. The patient, doomed to the surgical rack, approaches the day set for his agonizing experience with the greatest horror. At last the terrible time arrives; he is placed upon the table and strapped down with unbreakable leather bands. Powerful assistants hold his hands and legs; a powerful and hardened surgeon wields the knife. No quieting drug takes off the excruciating pain of the incision. The shrieks of the patient are as useless as his appeals for mercy. Mercy, the surgeon knows, consists not in hearkening to the outcries of the sufferer, but in swiftly completing the ghastly job. So the muscular assistants put added strength to their task of holding down the suffering wretch; and the surgeon makes his incisions quicker. The victim implores for a respite, but none is given. Blood flows and bespatters the attendants, and, maybe, a good God wills it that the poor martyr swoons. But the knife never ceases its task. The operation proceeds to the end.

Such an experience was enough to harden the softest nature, and the surgeon lost much of the man and took on, unwittingly perhaps, the callousness of the brute. About him was a veritable shamble. For all an onlooker might know, the scene may have been the slaughter of a bull.

How different is the operation of today! No longer does the patient dread the pain, for he knows that chloroform or ether will render him absolutely unconscious until it is all over. There is no longer any need for brawny assistant, or lightninglike gashes. It is all done painlessly, quietly and thoroughly, thanks to the discovery of anæsthesia.

James Young Simpson, who was responsible for much of this transformation, was born in the village of Bathgate, Linlithgow-

shire, Scotland, on June 7, 1811, and was the son of a baker. At a very early age he manifested an extraordinary aptness, and among the simple village folk was spoken of as the "wise wean."

While yet behind the counter of his father's place he was known as the "young philosopher," and between customers he applied himself to his task of mastering reading, writing and drawing. It was already taken for granted by his family and the village folk in general that young James was some day to become a great man. His brothers and sisters waived all opportunities for educational advancement in his favor, and every encouragement was given him to acquire the learning that he so eagerly desired.

At fourteen he entered Edinburgh University, and in his second year he won a bursary, or scholarship, valued at \$50. While at the famous Scottish university he acquired a liking for medicine, and in his third year took up its study. At eighteen he was turned out a fully qualified practitioner.

Shortly after leaving college he heard of a vacancy for a doctor in a small parish on the banks of the Clyde. He applied for the place, but failed of election. Later in life, having already become one of the world's greatest physicians, in speaking of his feelings at being refused the position, he said: "I felt a deeper chagrin and disappointment than I have ever experienced since that date. If chosen, I would probably have been working there, as a village doctor, still." By the liberality of his brother, "Sandy," he was enabled to return to Edinburgh to resume his studies, at the same time acting as an assistant to Dr. Gairdner, who conducted a dispensary. Somewhat later he attended the lectures of Dr. Thatcher, from whom he imbibed a love of the practice of obstetrics, which ultimately developed into the great passion of his life.

In 1832 he qualified as a doctor of medicine, his thesis being in Latin upon a pathological subject, as a result of the excellence of which he was appointed assistant to Dr. Thomson, the professor of pathology, at a salary of \$250 a year. It was due principally to Dr. Thomson's suggestion that Simpson paid especial attention to the study of obstetrics, with the object of ultimately teaching that branch. Simpson soon acquired the fullest confidence of his chief, so much so that occasionally he would prepare for the professor of pathology his regular lecture. He took up enthusiastically the new microscope, which had just come into vogue, in the usefulness of which Professor Thomson did not concur.

The story is told that one day the young assistant prepared for his chief a lecture on the value of the microscope, which the professor had delivered without previously perusing. Surprised at the opinions he was expounding to his auditors, he looked up glaringly several times at his assistant; and when the students had been dismissed, he shook his fists in Simpson's face, declaring, "I don't believe one d——d word of it."

In 1835 Simpson was enabled to visit the hospitals on the Continent as a result of the ever-generous assistance of his brothers, Alexander and John. While in Liverpool he met for the first time

Miss Jesse Grindlay, who afterwards became Mrs. Simpson. Simpson was only twenty-eight when he made application for the vacant chair of midwifery at the university. He had a number of rivals for the place, and the contest was one of the most strenuous in the history of the institution. The Town Council, comprising thirty-three citizens, had the selection of the various professorships, and an event of this sort carried with it the interest of the entire community.

To do away with the objection of bachelorhood, the energetic candidate hastened to Liverpool and brought back his bride. By this time the town was quite aroused and divided itself into several camps, each enthusiastic over the qualifications of its particular standard-bearer. The question took on a political turn, and both Whig and Tory became more and more animated as the contest proceeded. Although originally there had been five candidates in the field, Dr. Evory Kennedy, of Dublin, ultimately became Simpson's only rival.

In order to contradict the report that he was a poor speaker, Kennedy's friends engaged a large hall at considerable expense, and he dispelled that illusion before a crowded and enthusiastic audience. Kennedy's testimonials consisted of a volume containing 150 pages, and Simpson's numbered few less. The expense of the canvass amounted to \$2500, a considerable sum for even a professorship at Edinburgh.

There was no doubt, however, as to who was the most popular aspirant among the people. Simpson was not only a Scotchman, but already a man of high scientific ability.

Finally the day of the election arrived. The council chamber was packed almost to suffocation. It was not difficult to discern for whom there was most popular sympathy. Simpson's enthusiasm caught the crowd, and when, after a counting of the ballots, it was made known that the young Scotchman had won by a vote of 16 to 17, the delight of the spectators knew no bounds. The same evening he wrote to Liverpool: "All the political influence of both the leading Whigs and Tories here was employed against me; but, never mind, I have got the chair, in despite of them, professors and all. Jessie's honeymoon and mine is to commence tomorrow."

The family prophecy that James would some day be great was already beginning to materialize. Practice of a highly satisfactory quality came quickly, and the number of students who were attracted to his lectures rapidly increased. He became the most popular lecturer of the school, and, naturally, aroused the jealousy of some of his confreres. One very able professor even went so far as to change his own hour to the time when Simpson lectured so that students would not be able to attend the midwifery talks. But this trick was soon discovered and the obstetrician became more popular than ever. Among his patients were many members of the nobility, and his great reputation already attracted clients from all parts of Great Britain.

In 1841 his first important contribution was published. It was a "Memoir on Leprosy and Leper Houses," and attracted the attention of the entire world. It was considered the most important contribution on that subject made up to that period, and has remained an authority ever since. The genial Professor soon found his modest quarters too small and he moved to No. 52 Queen street, where within a few years he was to enjoy so many triumphs. No house was more frequented by famous men and women, and as for patients—they came from all lands. None was too great to request his aid and none too poor to receive it.

In 1847, when but thirty-six years of age, he became Physician Accoucheur to the Queen, the highest honor that could be bestowed upon a medical man in Great Britain.

Although Simpson was in his day the most famous physician and obstetrician, and although to him belongs much of the credit of advancing the art of midwifery from a rather low position to its present high state, yet his name will no doubt be principally remembered in connection with his discovery of the anæsthetic property of chloroform. Whether or not this would have occurred, had not Morton already brought out his ether, is a debatable question. The greatest credit and glory are due to the American dentist and his colleagues for working out and developing the idea. Credit and glory are likewise due to Simpson for his discovery. To him belongs also the credit for fighting the matter of anæsthesia out with the profession and laity, a task which proved surprisingly difficult.

Morton took up the study of chloric ether in December, 1844, after the failure of Wells to successfully introduce nitrous oxide gas. At the suggestion of Jackson, he abandoned chloric ether for ordinary ether. He used it upon himself and found that it had produced unconsciousness. He was surprised and delighted. Soon a patient entered his office to have a tooth extracted. He administered the fumes of the drug and under its influence took out the tooth. There was no pain. In writing of the event, he says: "I was so much agitated that I came near throwing the instrument out of the window. But now came a terrible reaction. The wrenching of the tooth had failed to rouse him in the slightest degree; he remained still and motionless, as if already in the embrace of death. The terrible thought flashed through my mind that he might be dead; that in my zeal to test my own theory I might have gone too far and sacrificed a human life. I trembled under the sense of my responsibility to my Maker and to my fellow-men." He seized a glass of water and dashed it into the patient's face. This aroused him in a minute. "I instantly, in as calm a tone as I could command, asked: 'Are you ready to have your tooth extracted?' 'Yes,' he answered, in a hesitating voice. 'It is all over,' I said, pointing to a decayed tooth on the floor. 'No!' he shouted, leaping from his chair."

Morton laid his anæsthetic before the staff of the Massachusetts General Hospital, Boston, and its great value was thoroughly

demonstrated. He never reaped much benefit from his discovery and died in 1868, as a result of an illness no doubt superinduced by the worry of almost perpetual contention.

The value of ether soon was recognized in Europe, and Simpson tried it successfully on an obstetrical case at the Edinburgh Medical School. Liston, the great London surgeon, had also used it; but Sir James believed that it had certain shortcomings, and he set out to discover a drug that would obviate them. A Mr. Waldie, a Liverpool chemist, suggested to him chloroform, which had, as early as 1831, been described by Soubeiran and Liebig. Simpson and his assistants examined it superficially and laid it aside. They inhaled a large list of drugs, which all proved valueless. Finally they came back to chloroform.

In describing the experiments, Professor Miller says that, having called in upon his colleague to see how the work was coming on, he found the party "bright-eyed, very happy and very loquacious, expatiating on the delicious aroma of the new fluid." Dr. Simpson was soon asleep. He awoke and found himself prostrate on the floor. About him there was confusion and alarm. Turning around, he saw Dr. Duncan, an assistant, beneath a chair, "his jaw dropped, his eyes staring, his head bent half under him, quite unconscious." He saw "Dr Keith's feet and legs making valorious attempts to overturn the supper-table."

Upon regaining consciousness, the experimenters were delighted with the results obtained. Little time was lost in bringing the new anæsthetic to the attention of the world, and Simpson soon had the satisfaction of seeing it in general use. But there was much opposition to it at first and it required all of the discoverer's great controversial powers to combat the arguments brought against its use. Simpson had as many friends among the profession in America as in England. Almost the very last words he ever wrote was a message to them, in which he said: "With many of our profession in America I have the honor of being personally acquainted and regard their friendship so very highly that I shall not regret this attempt—my last, perhaps, at professional writing—as altogether useless on my part, if it tend to fix my name and memory duly in their love and esteem."

Towards the end of his career he was compelled to give up much of his work on account of failing health and numerous attacks of angina pectoris. He died, mourned by two continents, on May 6, 1870.

A grave was offered the great physician in Westminster Abbey, but, at his own previous request, he was buried at Warriston, which already contained the remains of five children, who had preceded him. She who shared with him all of his joys and sorrows survived him but a few weeks. Lady Simpson was laid at rest beside her deceased husband on June 20, 1870.



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WM. ROYAL SOTKES, M.D., Director.

Chemical Laboratory:
W. E. HOFFMAN, JR., Ph.D., Director.

This Department is Under the Direction of the Commissioner of Health

THE EARLY DIAGNOSIS OF SYPHILIS.

By Harry W. Stoner, M.D.

IN May, 1905, just five years ago, Schaudin and Hoffman¹ first called attention to the presence in syphilitic lesions of a parasite to which they gave the name "*Spirocheta pallida*." Since this time their observations have been corroborated by investigators throughout the world. Not only has the organism been found in primary, secondary, tertiary and congenital lues, but it is constantly absent in non-specific diseases, and it is now generally accepted as the etiologic factor in syphilis.

As would be expected, the large amount of work carried on in confirming the work of Schaudin and Hoffman has led to many improvements in the technique in demonstrating these organisms, so that at the present time the microscopic diagnosis of primary and secondary syphilis is almost as simple as the microscopic diagnosis of acute gonorrhea.

Notwithstanding the general acceptance of the *Spirocheta pallida* as the cause of syphilis, and despite the fact that the finding of these organisms in primary sores is a comparatively simple proceeding, a large majority of general practitioners still persist in withholding treatment from syphilitic patients until the appearance of the secondary lesions. This may be due to any of the following reasons: (1) Doubt as to the *Spirocheta pallida* being the cause of syphilis; (2) a lack of knowledge of the simplicity of finding the organism; (3) conservatism in adopting early treatment until more is known regarding the results of such treatment. It is with the object of giving some of the later views regarding these questions that the present paper has been written.

The Spirocheta Pallida as the Cause of Syphilis.—The facts at

hand to prove the *Spirocheta pallida* as the cause of syphilis are as follows:

First—The organism has been found innumerable times by the best observers throughout the world. Since the publication of Schaudin and Hoffman's observations, the *Spirocheta pallida* has been found in syphilitic lesions by nearly every syphilographer and bacteriologist, and while at first it was not always possible to demonstrate the organism in all cases of syphilis, improvements have been made in the technique, so that now many observers claim to be able to demonstrate it in 100 per cent. of cases in primary and secondary syphilitic lesions.

Second—It is constantly present in syphilitic and constantly absent in non-syphilitic lesions. A few observers have claimed to

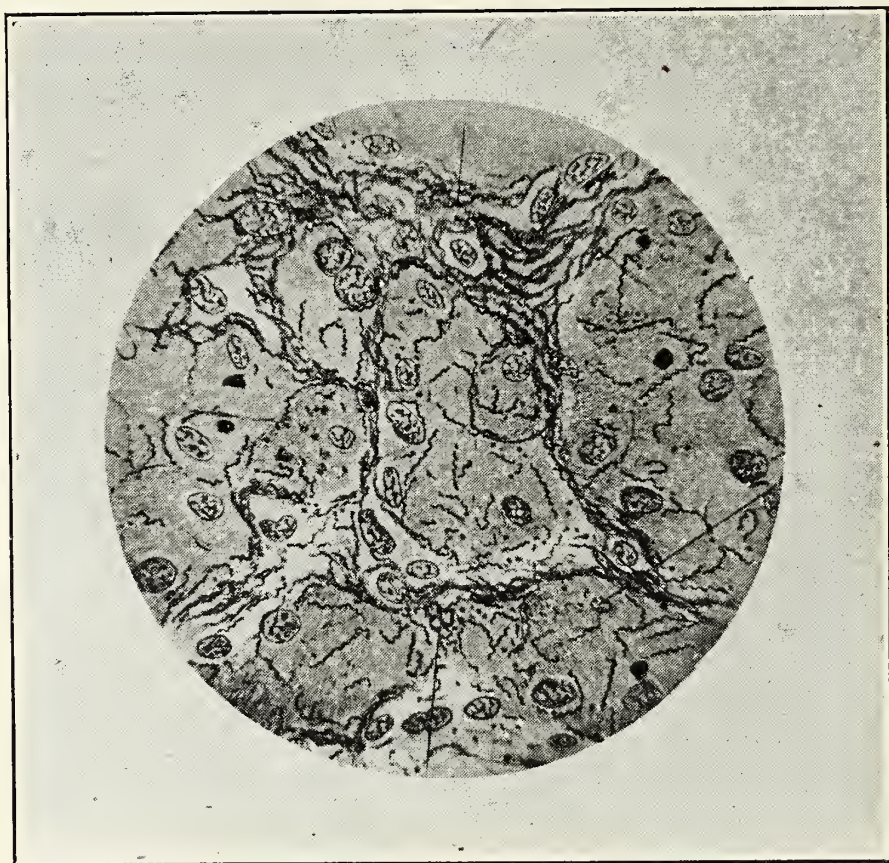


FIG. 1.—SHOWING SPIROCHETA PALLIDA IN CARDIAC MUSCLE OF FETUS. STAINED BY LEVADITI'S SILVER METHOD.

have found the *Spirocheta pallida* in other than syphilitic conditions. These observations have not been confirmed, and in the majority of instances further investigations have proved that the parasite under consideration was not the pale *Spirocheta*, but some other spiral organism.

Third—It is found in all stages of syphilis, even the tertiary, and in all types of lesions. The *Spirocheta pallida* is constantly present in primary and secondary syphilis, and has been demonstrated in chancres, inguinal lymph glands, condylomata, mucous patches, secondary erythematous patches, and in papular syphilides. They are not always found in tertiary lesions, but have been demon-

strated in gummata by Spitzer,² Douthelepont and Grouven,³ Tomaszewski,⁴ Schaudin,⁵ and many other observers.

Fourth—The large number of organisms found in primary and secondary syphilitic lesions, and in the organs of congenital luetics. The number of organisms found in primary and secondary lesions is sometimes enormous, and in tissues the organisms are also frequently found in large numbers. This is well demonstrated in Fig. 1, which shows a section of heart muscle from a case of congenital syphilis studied at the University Hospital, in which organisms were demonstrated in the heart, lungs, liver, spleen and kidneys.

Fifth—The organisms are constantly found in the lesions in the experimental production of syphilis in monkeys, and Finger⁶ has found them in every case up to the forty-second successive inoculation.

Sixth—There is a gradual diminution in the number of organisms when mercurial treatment is adopted, and a complete disappearance when the treatment is continued for some time. This has been noted by a host of observers, and it is often difficult or impossible to demonstrate the organisms in patients who have received treatment before an examination for the *Spirocheta* has been made.

Seventh—Human material containing these organisms gives the reaction for antigen with the serum of syphilitics. Neisser⁷ has shown that in the "complement deviating test" the demonstration of positive antigen reaction indicates the presence of parasites in the body, and that the patient requires further treatment, whereas a positive anti-body reaction alone indicates that the patient has merely sheltered the parasites, and treatment to dispel or destroy them is not called for, as there are none left in the body. Therefore, the positive antigen reaction of material containing *Spirocheta pallida* to syphilitic serum is a very strong link in the chain of proof that this organism is the cause of syphilis.

Methods of Demonstrating the Spirocheta Pallida.—Chancres, mucous patches, and condylomata are thoroughly scrubbed with warm water and soap, and then vigorously rubbed with a cotton swab made by wrapping a small piece of cotton around a probe. This causes an abundant exudation of clear serum, which can be secured for examination by means of a platinum loop. In the examination of cutaneous lesions, a tiny cantharides plaster placed over the center of the lesion will cause an exudation of serum in a very short time, but perhaps a better method is to scarify the lesion down to the papillary layer and apply a small cupping glass. When neither the plaster nor cupping apparatus are convenient, the lesion may be scarified, and the resulting drop of blood allowed to stand for several minutes until the serum separates out. Material is obtained from enlarged lymph glands by puncturing them with a hypodermic needle and securing a few drops of serum.

The next step in the procedure depends upon the method of

examination. By far the most satisfactory results are obtained by the use of a "dark field illuminator." This apparatus, which can be attached to almost any form of microscopic stage, consists of a central diaphragm which acts as a black background, around which indirect reflected rays are admitted which illuminate the object. The principles evolved are the same as those by which particles of dust or other material with feeble refractive power are made visible in a darkened room by a ray of sunlight passing through them.

When the specimen is to be examined by the dark field illuminator, the slide and cover-glass must be scrupulously clean. A small drop of the suspected serum and an equal quantity of salt

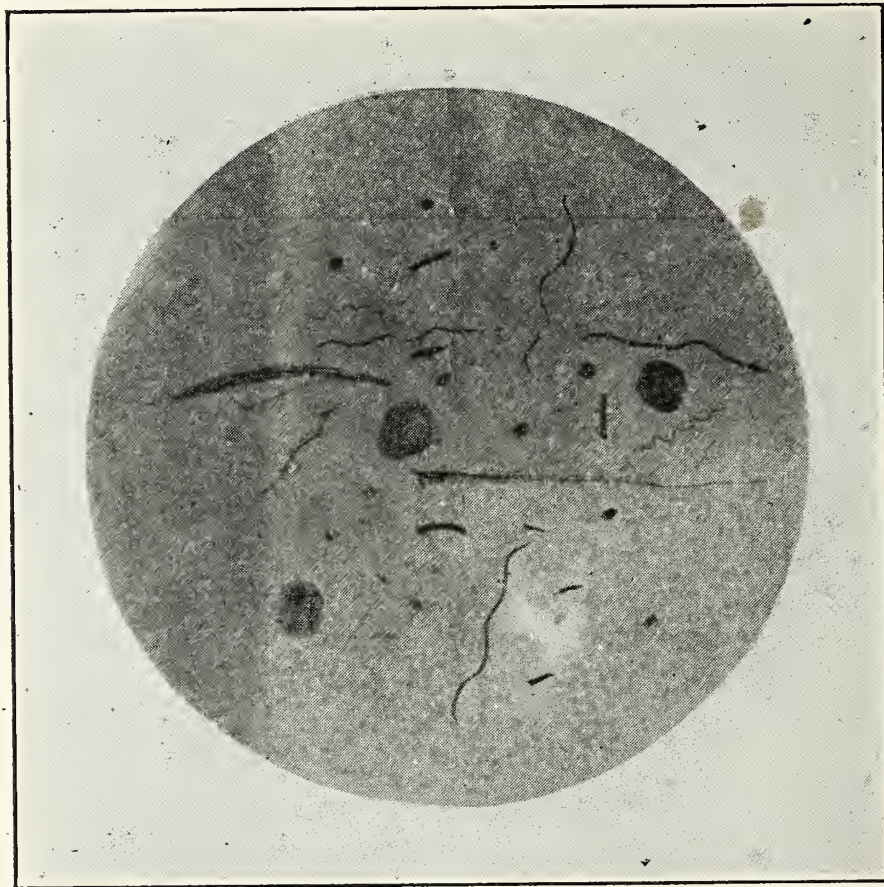


FIG. 2.—SMEAR, SHOWING SPIROCHETA PALLIDA AS THE VERY SMALL SPIRALS. SPIROCHETA REFRINGENS AS THE LARGER SPIRALS, BACTERIA, BLOOD CELLS AND FIBRIN.

solution are mixed on the cover-glass, and this is inverted over the slide. The organisms are readily seen with the high power dry lens. When studied by this method the Spirocheta is seen as a very slender silver spiral thread against the dark background, the windings of the spiral being perfectly regular and corkscrew-like in appearance. It is actively motile, the motility being partially due to a rotary action of the organism, and by adding warm salt solution under the edge of the cover-glass from time to time the motility can be preserved from one to two hours. A number of organisms are usually to be found in one field; occasionally, however, a diligent search is necessary.

When the dark field illuminator is not available, the *Spirocheta* can be demonstrated by proper staining methods. A very thin smear of the serum is made over a cover-glass and dried in the air. There are many methods of staining, but probably one of the best is that used in this laboratory. This consists in staining with Hastings' blood stain, which is applied to the specimen for five minutes, after which distilled water is added until a metallic film is formed. This is allowed to remain for 15 minutes, the specimen is rinsed in water, dried, and examined with the oil immersion lens. The *Spirocheta pallida* appears as a very palely-stained, regularly-curved organism. In stained specimens other spiral organisms, such as the *Spirocheta refringens*, from chancres and cutaneous lesions, and *Sp. buccalis* and *Sp. dentium* from mucous patches in the mouth are frequently met with. These organisms are usually longer, have fewer and more irregular curves, and stain deeper than the *Spirocheta pallida*.

Hecht and Wilenko⁸ have recently recommended the use of India ink in the demonstration of the *Spirocheta pallida*. A drop of the serum is mixed with a drop of India ink and the mixture thinly smeared over a slide and allowed to dry. When examined with the oil immersion lens the parasites stand out as with the dark field illuminator. The *Spirochetæ* are not stained, but having a definite thickness, they are not covered by the ink, and therefore the structural outlines are well differentiated in the black background. Higgins' general drawing ink may be used, but the best results are obtained with Wagner's India ink, Peliken No. 541.

Results of Early Treatment.—Metchnikoff and Roux⁹ have aborted syphilis in monkeys and also in humans by using a 33 per cent. calomel-lanolin ointment one hour after inoculation. These observers are very enthusiastic about this simple remedy, and advocate its use as a prophylactic whenever possible. Neisser¹⁰ has also aborted syphilis by incising the inoculated area at periods varying from 10 minutes to 12 days. He was not always successful, however, and 10 cases on which this operation was practiced in from 8 to 14 hours after inoculation developed syphilis. A large majority of syphilographers, both in this country and abroad, are now treating syphilis as soon as a diagnosis is established by finding the *Spirocheta pallida*.

Hitherto the main object in waiting for the development of the secondary symptoms before beginning treatment in syphilis has been due to a doubt as to a correct diagnosis of the disease. The typical Hunterian chancre is seldom met with, and the general practitioner sees too few cases of this nature to be able to make a correct diagnosis from the appearance of the primary sore alone; hence he has hesitated to subject the patient to a long period of medication until he was absolutely sure he was dealing with syphilis. After finding the *Spirocheta pallida* no such scruples need be entertained, and radical treatment may be started at once.

The Wasserman Reaction.—Not only can the physician make an early and absolute diagnosis of syphilis, and begin treatment before

the system is saturated with syphilitic virus, but means are now at hand by which the duration of treatment can be determined. This may be ascertained by the Wasserman reaction. It is not within the scope of this article to deal with the intricacies of this test. Suffice it to say that it is positive in at least 90 per cent. of all cases of syphilis, and, unlike the demonstration of the *Spirocheta pallida*, it is not influenced by treatment, but is positive until the patient is free from all traces of the disease. In fact, it has found its greatest use in the diagnosis of those obscure cases in which treatment has been stopped too early, and the majority of negative reactions obtained in cases of known syphilis occur in the very early stages, when the *Spirocheta pallida* can be demonstrated. Therefore, the diagnosis of primary syphilis by the presence of the *Spirocheta pallida*, the adoption of early treatment, and the control of the treatment by means of the Wasserman reaction not only promises to create a new era in the history of syphilis, but there is every reason to hope that the wide prevalence of the nervous affections and cardio-vascular disturbances which owe their origin to syphilis may be greatly lessened or entirely eradicated in those cases in which proper treatment is promptly adopted and efficiently carried out.

The bacteriological laboratory of the Subdepartment of Health is prepared to make examinations of smears for the *Spirocheta pallida* for physicians. Very thin smears of serum, obtained according to the methods described above, should be made on the slides found in the "miscellaneous outfits," and the outfit sent to the laboratory. These miscellaneous outfits can be obtained at any of the 118 culture stations in the city.

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- ³Doutrelepoint and Grouven, *Deutsch. med. Wochnschr.*, 1906, No. 23, p. 908.
- ⁴Tomaszewski, *Munich. med. Wochnschr.*, 1906, LIII, p. 1301.
- ⁵Schaudin, *Berliner klin. Wochnschr.*, 1905, No. 22, p. 673.
- ⁶Finger, *Ref. Jour. Amer. Med. Association*, December 5, 1908, No. 51, p. 1928.
- ⁷Neisser, *Deutsche med. Wochnschr.*, XXXII, No. 48, p. 1975.
- ⁸Hecht and Wilenko, *Wiener klin. Wochnschr.*, XXII, No. 26, p. 946.
- ⁹Metchnikoff and Roux, *Annals de l'Institut Pasteur*, No. 10, p. 785.
- ¹⁰Neisser, *Die experimentelle Syphilis-Forschung*, Berlin, 1906, p. 80.

Book Reviews.

PRESCRIPTION WRITING AND FORMULARY. By John M. Swan, M.D., Associate Professor of Clinical Medicine in the Medico-Chirurgical College of Philadelphia; Instructor in Clinical Pathology and Tropical Medicine, Philadelphia Polyclinic and College for Graduates in Medicine; Fellow of the College of Physicians of Philadelphia. Bound in flexible leather. Price \$1.25 net. 1910. Philadelphia and London: W. B. Saunders Company; Baltimore: Medical Standard Book Co.

The right of existence of this booklet is based on the assumption that physicians are not well enough acquainted with the simpler remedies of the day. With the increase of our knowledge of pathology and etiology, according to the author, the number of agents necessary for the treatment of disease has materially decreased, and with this idea in view he has added an excellent lot of sample prescriptions which he hopes will aid in reawakening the lost art of prescription writing. The manual contains a complete list of the official preparations of the United States Pharmacopodia. Some little attention is given to the correct writing of a prescription. Chapter II is devoted to the Latin for prescription writing. Any work which has for the object the betterment of the therapeutic aspect of medicine is to be praised, and, whilst this volume is very modest, it has its place in medical literature, namely, the teaching of the lesson that as far as compatible with the patient's welfare the physician should be absolutely certain of each and every ingredient which goes into the make-up of his prescription.

POCKET THERAPEUTICS AND DOSE-BOOK, WITH CLASSIFICATION AND EXPLANATION OF THE ACTION OF MEDICINES. By Morse Stewart, Jr., B.A., M.D. Fourth edition, rewritten. Cloth bound. Price \$1 net. Philadelphia and London: W. B. Saunders Company; Baltimore: Medical Standard Book Co. 1910.

This little volume of 263 pages is of such shape and size as to be easily slipped in one's pocket and thus be ever present for quick reference. It is especially adapted to student use, from the fact that it can be kept on one's person without inconvenience, and whenever a disputed or obscure point arises can be readily and handily used for reference. A few lines are given up to prescription writing. The list of the abbreviations used in prescriptions is incorporated in the introduction. It also contains many little points convenient to know on occasions, such as the genitive endings, number of drops to a fluid dram, symbols used in prescription writing, table of apothecaries' weight, measures of capacity, metric system, modes of medicinal introduction, classification of medicines. These are all presented in an abbreviated and handy form. The dose table is particularly full, the dosage being in both the metric and apothecaries' systems. The reading matter is modern, but brief and sketchy, yet answers the purpose for which the book was written admirably. Accuracy and modernness are its chief claims to recognition.

SURGICAL AFTER-TREATMENT—A MANUAL OF THE CONDUCT OF SURGICAL CONVALESCENCE. By L. R. G. Crandon, A.M., M.D., Assistant in Surgery at Harvard Medical School; Assistant Visiting Surgeon to the Boston City Hospital; Consulting Surgeon Frost General Hospital. With 265 original illustrations. Octavo of 803 pages. Philadelphia and London: W. B. Saunders Company. 1910. Cloth, \$6 net. Half morocco, \$7.50 net.

This book can and must fill an important void in general and special textbooks on surgery. Most of the books so far written on surgery are lamentably weak on the subject of after-treatment of the surgical patient. Somehow or other the author takes it for granted that the embryonic surgeon is divinely endowed with the necessary knowledge for the handling of post-operative cases—a most absurd deduction. Crandon's contribution will fill this void, and is assured of a prominent place in the service of the beginner, for it is not skimpy in its handling of this most important subject, but as thorough, complete and up to date as it is within the power of man to make it. The author thoroughly realizes the fact that he cannot advise the exact procedure for every case, but can only lay down general rules which, if modified, will meet the exigency of the moment. The technique advised, however, has stood the test of practice, and can be safely followed by the reader. The press-work is as perfect as human and mechanical ingenuity can make it. The illustrations are well executed and materially aid in elucidating the text. Chapters are devoted to the sick room; anesthesia, including nausea and vomiting, restlessness, etc.; thirst, and its relief; pulse, temperature and respiration; post-operative hemorrhage; shock; coma; diet after operation; rectal feeding; gavage; care of the bowels; bursting of the abdominal wound; sequelae of the anesthetic; hiccough; bandaging; treatment of the operative wound; treatment of septic wounds; sinuses and fistulae; cutaneous rashes; rare complications; general treatment in convalescence; post-operative hernia; artificial limbs; preparation of the patient; operations on the head and face; operations on the thorax; operations on the abdomen; Coley serum treatment; some invalid and convalescent food recipes. As a rule, the author says, the end of the operation marks the beginning of the surgeon's care and anxiety. In operating, the surgeon consumes from 15 minutes to one hour—rarely longer—in performing a piece of surgical technique with which he presumably feels at home. When the patient leaves the table, however, he goes over into strange hands for an indefinite period of convalescence, with all its discomforts and all the possibility of mishap. The surgeon must now depend in a large measure upon others to carry out his plans for after-treatment and to keep him informed to the changes that may develop from hour to hour and the emergencies that may arise. For the time being he must relegate a portion of his authority and responsibility to the person in charge—the nurse in a private family, or the house officer in a hospital. Skillful after-treatment has pulled through many

a forlorn hope, while neglect in the after-treatment will negative the most skillful effort of the best surgeon. Success in after-treatment means the successful mastery of a mass of details. The above paragraph is a sufficient warrant for the production of Dr. Cranston's book. We ourselves have seen the chances for a successful outcome of a scientific and thoroughly satisfactory operation materially marred by the bungling after-handling of an inexperienced or careless interne. The diction employed is simple, thus rendering the grasping of the author's directions exceedingly easy, and the directions so explicit that no interne or inexperienced surgeon can afford to be without a copy of this book.

A TEXTBOOK OF PATHOLOGY. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology in the Medico-Chirurgical College of Philadelphia; Pathologist to the Philadelphia General Hospital and to the Medico-Chirurgical Hospital, Philadelphia; Director of the Laboratories of the Henry Phipps Institute, Philadelphia; Fellow of the College of Physicians, etc. Second edition. Thoroughly revised. 437 illustrations, a number in colors. Philadelphia and London: W. B. Saunders Company; Baltimore: Medical Standard Book Co. Cloth, \$5 net. Half morocco, \$6.50 net. 1910.

This volume has been thoroughly revised and brought up to date, all advances of real merit having been incorporated in the text. There are many good general pathologies on the market, but in arrangement of subject-matter, handling of text, clearness and precision of statement, this volume of McFarland's meets the needs of the student and general practitioner better than any which it has been our privilege to read. Whilst complete in every respect, still each subject is reduced to such a degree of compactness as not to be overburdened with unnecessary detail, and thus wearisome to the reader. It meets the requirements for which intended admirably, namely, a textbook. The work is from the hand of a practical teacher, and is made to include that which has been found by the author best adapted to student purposes. Of particular interest is the chapter on the Pathology of Nutrition, which includes sections on the pathology of digestion; assimilation of food—diminished assimilation; inanition; marasmus; rachitis; scurvy; increased assimilation; obesity; metabolism; fever; secretion; excretion; bile; urine; end-products. Much useful information is contained in the chapter on the Pathology of Circulation. The various aspects of anemia, hyperemia, hemorrhage, edema and the several forms of thrombosis are simply and thoroughly discussed. The treatment of tumors is in accord with modern ideas. The vegetable and animal parasites entering into the production of human diseases are given ample notice. Immunity, though briefly described, contains the milk in the cocoanut. The book is an ideal textbook, and whilst it contains no frills, and does not enter into the controversial and disputed points of pathology, still it so completely

covers the field of practical pathology that we take great pleasure in recommending it to our readers.

MEDICAL ELECTRICITY AND ROENTGEN RAYS, WITH CHAPTERS ON PHOTOTHERAPY AND RADIUM. By Sinclair Tousey, A.M., M.D., Consulting Surgeon to St. Bartholomew's Clinic, New York city. Octavo of 1116 pages, with 750 illustrations, 16 in colors. Philadelphia and London: W. B. Saunders Company; Baltimore: Medical Standard Book Co. 1910. Cloth, \$7 net. Half morocco, \$8.50 net.

In recent years so much of medical importance has been added to our knowledge of medical electricity that it is extremely difficult to keep abreast of the times. With this object in view Dr. Tousey has endeavored, and, in our opinion, has succeeded, in including under one cover that which should be known by those engaged in general practice of medical electricity, roentgenology, and their allies. He not only tells what has been accomplished, but also thoroughly explains the technique of the object in view. His contribution is therefore a distinct and acceptable addition to the literature on medical electricity. The physics of static electricity and its therapeutic applicability to disease is simply and intelligently discussed. Under this caption are to be found sections on the Leyden jar, nature of electric sparks, oscillatory nature of spark discharges, the modern static or influence machine, the care of the static machine, starting of static machine, accessory apparatus for treatment by static machine, definitions of the various electric units, physical effects of static electricity, physiologic and therapeutic effects of static electricity, therapeutic applications of static electricity, various methods of applying electricity from a static machine, etc. Nearly 150 pages are devoted to the subject dynamic electricity. Here we find discussed voltaic cells, thermo-electricity, storage batteries, the booster, the production of electricity by electro-magnetic induction, Ampere's electric theory of magnetism, magnetic flux, the dynamo, the interrupter, measurements of voltaic current, etc. Especially interesting are the chapters on the physiologic effects of electricity and electro-pathology. In the latter chapter the pathology of lightning stroke, of static electricity, of high-tension currents, of alternating currents, electrical burns, etc., is set forth extremely succinctly. A chapter is given over to ionic medication, its uses, limitations, and how to use it. In this chapter we are glad to state the author makes no extravagant claims of remarkable cures, but states the maladies in which this form of electricity has been used with apparent benefit to the patient. The technique of electrolysis for hypertrichosis, for angioma cavernosa, for vascular nevi, for birthmarks, for hairy and pigmented nevi, for sebaceous cysts, for warts, etc., is thoroughly but briefly stated. The chapters on the X-ray embrace such subjects as the properties of the X-ray, production, various forms of tubes, cathode rays, the static machine, induction coil, electrolytic interrupter, regulation of the primary current, ventral or valve tubes, interrupterless X-ray apparatus, properties of the X-ray,

secondary rays, different results from high and low tubes, developers, the requisite technique for the obtainal of the various regions of the body, etc. This subject is very comprehensively discussed from every aspect, machine, tubes, accessories, exposure to ray, and development. Apparently no question which could arise is overlooked. The chapter devoted to roentgen therapy comprises some 70 pages. Here we find the technique of X-ray therapy, dosage, and the application of the ray in malignant and benign conditions.

The book is a magnificent exposition of medical electricity. Every chapter bears the imprint of having been written by one solidly grounded in the subject, and should be found of invaluable service to those engaged in this line of endeavor.

DISEASES OF THE EYE. A HANDBOOK OF OPHTHALMIC PRACTICE FOR STUDENTS AND PRACTITIONERS. By George E. de Schweinitz, M. D., Professor of Ophthalmology in the University of Pennsylvania and Ophthalmic Surgeon to the University Hospital; Consulting Ophthalmic Surgeon to the Philadelphia Polyclinic; Ophthalmic Surgeon to the Philadelphia Hospital; Ophthalmologist to the Orthopedic Hospital and Infirmary for Nervous Diseases. Sixth revised edition. Octavo of 945 pages. 351 text illustrations and 7 lithographic plates. Philadelphia and London: W. B. Saunders Company; Baltimore: Medical Standard Book Co. Cloth, \$5 net. Half morocco, \$6.50 net. 1910.

The fact of this book having gone through five previous editions is sufficient warranty on the part of the author to present to the medical profession the sixth. The last edition, if anything, is better than any of the former. Experience has pointed out the defects of the others, and in this one the writer has given to his medical confreres a more practical, a more useful book than in any of his previous endeavors. In this volume much new material has been added. Sections have been incorporated on the use of the astigmatic lens, atoxyl amblyopia, ocular complications of nasal accessory sinus disease, cyanosis of the retina, obstetric injuries of the cornea, intermittent exophthalmos, galvano puncture for ectropion and entropion, combined iridectomy and sclerectomy, precornial iridotomy, v-shaped iridotomy, Smith's operation for removal of cataract in the capsule, operation for prosthesis in cicatrical orbit, and a vast number of other subjects of present-day interest to the ophthalmologist.

Unproven and fanciful theories are left to more advanced and special contributions on the subject of ophthalmology. Only that is included which is of practical value to the student and general practitioner, and the language of the book is such as to render the subject under discussion readily understood by those to whom the book is addressed.

An entire chapter of over 100 pages is devoted entirely to ophthalmic operations. Here is told in a few words the technique of the various operations on the lids, iris, conjunctiva, sclera, enuclea-

tion of eyeball, extraction of cataract, advancement of tendon, shortening of tendon, extirpation of lachrymal gland, etc.

As a matter of fact the book contains everything which a student of medicine or a general practitioner should know concerning diseases of the eye, the method of detecting same, and the remedial recourse for their cure. A particularly instructive feature of the book is the large number and excellence of the illustrations, some of which are colored. The book is complete in every detail, and the author has the knack of emphasizing the important without bringing the unessential into the limelight. The print is large and clear-cut, and the subject-matter absolutely up to date.

TECHNIQUE OF REDUCTION CURES, AND GOUT. Being Part 9 of a series of Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition. By Dr. Carl von Noorden, Professor of the First Medical Clinic, Vienna. Authorized American edition under Dr. Croftan. Price, \$1.50. New York: E. B. Treat & Co. 1910.

The keynote of this treatise is caution. The author declares that corpulent patients dieted to thinness at famous European sanitariums are oftentimes left so weak by the reducing treatment that they succumb within the succeeding year to circulatory failure.

The really important end of the sanatorium should be to educate the patient to a course of life and diet which he can follow for the rest of his life with conservation of his highest vigor. The quick results customary reflect credit on the sanitarium and leave the patient a prey to oncoming weakness which he ascribes to accidental causes. The reduction cure that leaves the patient tissue-starved (as shown by nervousness) is unquestionably a failure. "Generally speaking, a diet system will fulfill its object as a reduction cure the less it is 'original' and the more it corresponds in its general character to the diet that is customary in the circle in which the patient lives."

Gout and Lithiasis are discussed in the same wise and able manner. A scientist of the highest credentials, the author's distinguishing characteristic is common-sense—a breadth of view and masterly grasp of the main points.

THE NEW PSYCHOLOGY. A. A. Lindsay, M. D. Eugene & Arthur Lindsay, Publishers. Portland, Oregon. \$1.25.

The book is one of the pseudo-scientific treatises which sell on the strength of catchy titles. There is nothing in it for the physician. Its literary style is about on a par with that of the "improvement" on "Maryland, My Maryland," which has recently been accepted by our public schools. The book has for one of its objects the defining of "what mind department forms the ideas and another that makes these become reality." The mind acts (page nine) "just like if one held a red glass before a green object, and it looks black; or looking at a blue object with a yellow

glass it seems black, or to the man who has always looked at this objective world through blue glasses, declare all its properties are blue, so to the individual who has never perceived anything except through the senses, he determines the sense or its objective mind with its will and its reasoning, constitutes all the man is or may be mentally."

If you memorize a sentence like that, and fire it at a nervous patient very rapidly, with an air of great earnestness and intelligence, and follow it up by similar rapid and earnest statements, he is brought soon into a state very much like that of "Tommy Atkins" when "Fuzzy Wuzzy" broke the British square. Now we haven't any quarrel with "Fuzzy Wuzzy." He is admittedly wise and brave according to his lights. We toast him and admire his prowess; but he belongs in the medical Soudan.

There is such a thing as science, and there is such a thing as scientific literature. We therefore feel a certain humiliation that such a book should have been sent to us. We are not conscious of having done anything in the many years of our career as the representative medical journal of the State to deserve it.

INANITION AND FATTENING CURES. Being Part 8 of a series of Clinical Treatises on the Pathology and Therapy of Disorders of Metabolism and Nutrition. By Prof. Dr. Carl von Noorden, Professor of the First Medical Clinic, Vienna. Authorized American edition under Dr. Croftan. Price, \$1.50. New York: E. B. Treat & Co. 1910.

Exhaustive treatises on these subjects are so formidable to the physician in general practice that he instinctively shrinks from the whole subject of diets and metabolism. In the volume before us, however, the author takes such a simple view of confusing things that his little treatise is actually not tiresome recreation for a leisure hour. One rises, too, from its perusal with a feeling that he understands the subject more clearly than ever before. This simple exposition of deep things is the mark of a master mind.

Here and there through the pages may be found aphorisms of great value, which stick in the memory: "All attempts at the cure of certain neurasthenics are abortive unless we fatten them." "Tuberculous and diabetic subjects do better when somewhat fat." "Fundamentally, all main articles of food may fatten." "One never attempts to increase the weight of diabetics with carbohydrates; of gouty, with meat; of icteric patients with fat." "The object sought in adding fat to a diet is not only to fatten, but to make the person like and permanently use much fat." The author lays special emphasis on the desirability of educating thin and neurasthenic patients to new lifelong habits; claiming that the sanitarium usually trains him to standards which he cannot or will not maintain when he returns to his home. It should send him out trained to habits which will preserve his improvement in his ordinary home life.

MARYLAND MEDICAL JOURNAL

NATHAN WINSLOW, M.D., *Editor.*

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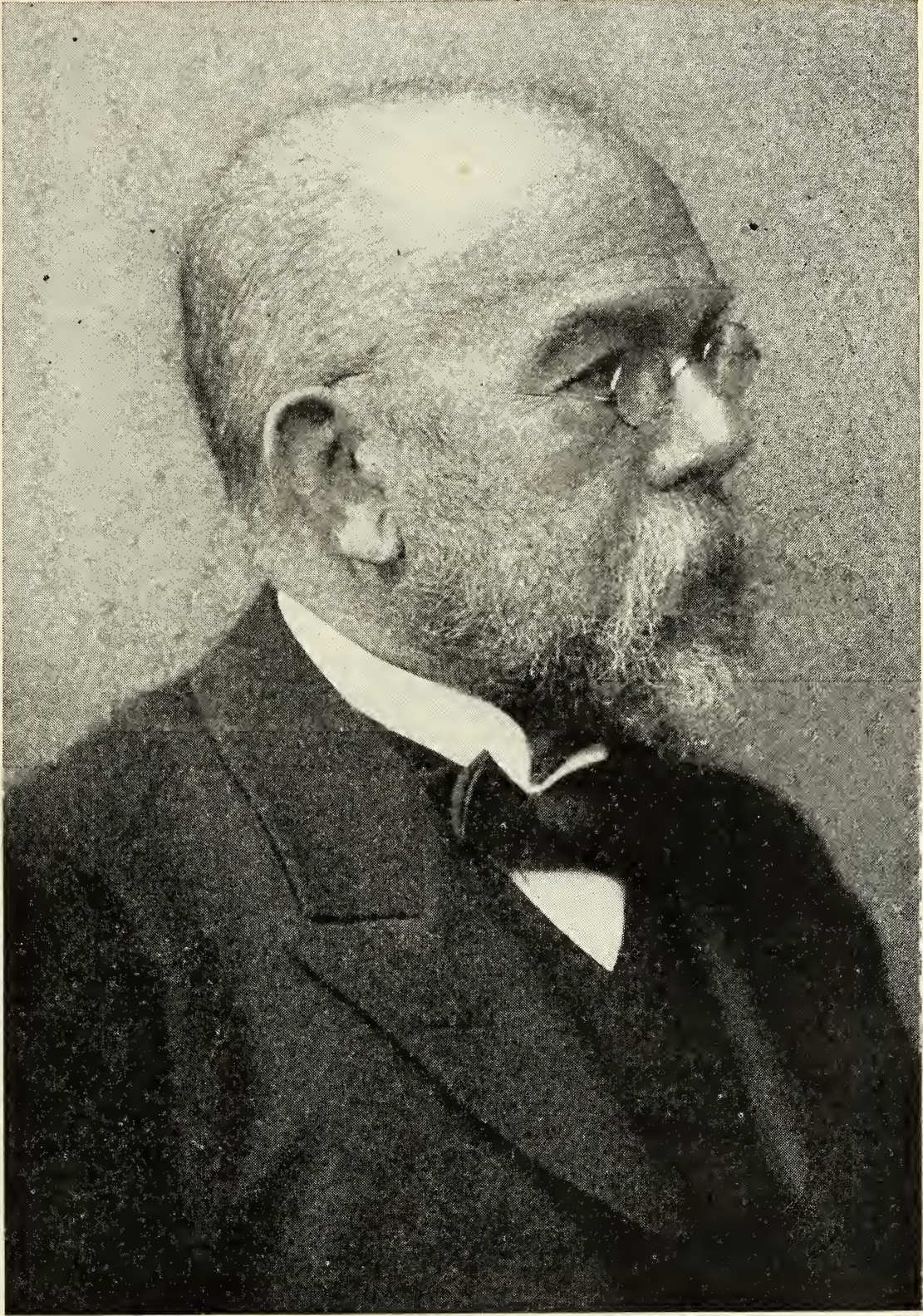
JOSE L. HIRSH, M.D.
ALEXIOUS MCGLANNAN, M.D.
A. SAMUELS, M.D.

BALTIMORE, JULY, 1910

ROBERT KOCH.

By the death of Robert Koch, May 27, 1910, the world loses one of its foremost modern benefactors, and medicine one of its greatest ornaments of all times. It has been his good fortune, the privilege of but a favored few, to add a tithe to human knowledge, the discovery of the tubercle germ. Besides this discovery he did other monumental work in bacteriology, some of which achievements we will briefly recall with the purpose of in a modest way paying honor to the memory of this international character, for his works knew no national bounds, but was a heritage to the entire world. Koch was born December 11, 1843, in Klausthal, Prussia. He studied medicine in the University of Goettingen, from which institution he was graduated with the degree of doctor of medicine in 1866. He then took and passed the State examination, accepted for a short time a position of assistant physician in the general hospital at Hamburg, after which he engaged in general practice in Langenhagen. In 1880 he was called to the Imperial Board of Health in Berlin. Koch's first scientific contribution to attract attention was his assertion, together with proof, that anthrax is a specific infectious disease caused by a specific living organism. His experimentation in this work was done while he was still a country doctor, isolated from the scientific world, and with but scant and imperfect equipment. This discovery was announced in 1876, and attracted the attention of the scientific world. It was the first actual demonstration that germs were living bodies. March 24, 1882, he made his first announcement of the discovery of the tubercle organism. The world is also indebted to Koch for the discovery of the cholera bacillus, tuberculin. He also carried on original investigations of bubonic plague, malaria, Texas fever, sleeping sickness, etc.

The life of Koch should be an inspiration to every physician. Starting as an obscure country practitioner, he added important discoveries to medicine and created the science of bacteriology. His work is indeed a shining example of what might be accomplished by any country doctor with but scant scientific equipment.



ROBERT KOCH

Medical Items.

DR. AND MRS. THOMAS H. BUCKLER will spend the summer motoring abroad.

DR. AND MRS. J. M. T. FINNEY are spending the summer months abroad.

THE recent suit against Dr. John D. Blake has been decided in his favor by the Court of Common Pleas.

THE trustees of the Washington County Hospital Association have made tentative plans for the erection of their new hospital, which is to cost in the neighborhood of \$100,000.

DR. ROBERT PARKE BAY has resigned as resident physician of the University Hospital, and has been succeeded by Dr. J. B. Piggott. Dr. Bay will engage in the practice of surgery.

DR. CHARLES BAGLEY, JR., has resigned as resident physician of the Hebrew Hospital, and has been succeeded by Dr. Grover C. Ney. Dr. Bagley will engage in private practice in Baltimore.

DR. AND MRS. CHARLES O'DONOVAN are spending the summer at Phoenix, Md

DR. PEREGRINE WROTH of Hagerstown, formerly of Baltimore, was operated on for appendicitis by Dr. William A. Fisher, Jr., at the Union Protestant Infirmary, June 22. We are glad to report to his friends that he is making an uneventful recovery.

DR. GORDON T. ATKINSON of Crisfield is being boomed for Governor in 1911 by his friends. Dr. Atkinson served as State Comptroller.

MARRIAGES.

HOWARD KAHN, M.D., University of Maryland, '00, to Miss Florence Ring, both of Baltimore, June 8, 1910.

FELIPE A. GARCIA, University of Maryland, '10, of San Juan, Porto Rico, to Miss Murray Ethel Robinson of Baltimore, June 24, 1910.

HERBERT SETH ANDERTON, University of Maryland, '10, of Tappahannock, Va., to Miss Margery Janney Smith of Walbrook, Md., June 8, 1910.

ALEXANDER R. MACKENZIE, M.D., University of Maryland, '10, of Baltimore, to Miss Una E. Cole of Los Angeles, Cal., at Ellicott City, June 1, 1910.

ROBINETTE BURNS HAYES, M.D., University of Maryland, '06, of Fayetteville, N. C., to Miss Minnie Bond Anderson of Mechanicsville, Md., at Baltimore, June 1, 1910.

JOHN ROBERTS CAULK, M.D., Johns Hopkins University Medical Department, '06, of St. Louis, Mo., to Miss Bessie Jenifer Harrison of Loch Raven, at Towson, June 1, 1910.

JOHN ROYER LAUGHLIN, M.D., Georgetown University School of Medicine, '06, of Hagerstown, Md., to Miss Myrtle Frances Binkley, June 15, 1910.

ALBERT EDGE CRAIG, M.D., Georgetown University School of Medicine, '06, of Washington, D. C., to Miss Azelia Degrange Jones of Shepherdstown, Md., June 15, 1910.

LAWRENCE KOLB, M.D., University of Maryland, '08, of Port Penn, Del., to Miss Lillian H. Coleman of Baltimore, at Baltimore, June 9, 1910.

THOMAS HENRY LEGG, M.D., University of Maryland, '07, to Miss Evelyn C. Repp, both of Union Bridge, Md., May 18.

JOHN HATHAWAY LINDSAY, M. D., University of Pennsylvania, '99, of Washington, D. C., to Miss Eliza Early Anderson of Rockville, Md., June 15, 1910.

ENGAGEMENTS

THE engagement has been announced of Emile Boniwell Quillen, M.D., University of Maryland, '05, of Wilmington, N. C., to Miss Leila Griffith Owings of West River, Md.

THE engagement is announced of Dr. Alexius McGlannan of Baltimore and Miss Laws of Philadelphia, the wedding to take place in July.

DEATHS.

HENRY WARREN FISHEL, M.D., University of Maryland, '86, at his home in Harrisburg, Pa., May 9, from cerebral hemorrhage, aged 58.

GEORGE P. YOST, M.D., Washington University School of Medicine, '71, of Glen Rock, Pa., at the home of his daughter in Baltimore, June 12, of heart disease, aged 62 years.

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It is better because more palatable, more compact, more portable.

It is more ethical because it is adver-
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It is a prescription product, not a popu-
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Baltimore for you. Shall we send it?

SHARP & DOHME

Correspondence.

May 24, 1910.

*To the Honorable Board of Health for Baltimore County,
Towson, Md.:*

Gentlemen—I herewith hand you summary of births, deaths and infectious diseases reported through the district health officers during the month of April, 1910.

During the past month I have made several visits to Arlington in company with Dr. Henry A. Naylor, health officer of the third district, in an effort to correct the unsanitary condition of that locality. Have also made a visit to Mattfeldt Hollow, at Mt. Washington, in company with Dr. R. C. Massenburg, health officer of the ninth district, where several cases of typhoid fever existed, caused by the pollution of an artesian well, which has now been abandoned for drinking purposes. There have been nuisances reported from other sections of the country, which have been referred to the health officer of the district in which same were located and promptly abated by such health officer. Your county health officer and the district health officers have taken cognizance of all matters referred to them or that have come under their notice, and promptly given same their attention. Respectfully submitted,

JAS. F. H. GORSUCH.

INFECTIOUS DISEASES.

Summary of the cases of contagious and infectious diseases reported for April, 1910, are as follows: Typhoid fever, 11 cases; scarlet fever, 13 cases; measles, 30 cases; whooping-cough, 5 cases; diphtheria, 5 cases; mumps, 2 cases; total, 66 cases.

STATEMENT OF MORTALITY.

Total deaths from all causes, April, 1910, 155, as follows: Infectious and communicable diseases, 30; general and non-communicable diseases, accidents, etc., 125.

Of the 30 deaths caused by infectious and communicable diseases, 15 resulted from tuberculosis, 1 from typhoid fever, 4 from whooping-cough, 5 from la grippe, 1 from septicemia, 1 from erysipelas, 1 from tubercular meningitis, 2 from simple meningitis. Of these decedents, 22 were white American-born persons, 4 foreign-born persons and 4 colored persons. As to sex, 11 were males and 19 females.

Of the 125 deaths due to general and non-communicable diseases, accidents, etc., 87 occurred in white American-born persons, 19 in foreign-born persons and 19 in colored persons. As to sex, 56 were males and 69 females. Causes of death as follows: Croup 1, catarrh 1, tetanus 2, rheumatism 3, cancer 8, acute chorea 1, cerebral hemorrhage 5, paralysis 3, heart disease 8, bronchitis 5, pneumonia 22, hemorrhage 1, pulmonary congestion 1, bronchial asthma 1, gastritis 1, peritonitis 1, abscess of frontal bone 2, Bright's disease 16, apoplexy 1, epilepsy 1, old age 8, cardiac syncope 1, Hodgkin's disease 1, vertigo 1, locomotor ataxia 1, debility (infants) 1, convulsions (infants) 6, marasmus 2, still births 12, premature births 5, accidents 3—total 125.

DEATHS BY INFECTIOUS DISEASES.

Tuberculosis.—Number of deaths in April 15, as compared with 28 in March and 23 in April of 1909. Of these decedents, 9 occurred in white American-born persons, 3 in foreign-born persons

Open Letter No. 2

Baltimore, Md., U. S. A.

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There is no other article known that will allay the itching of Eczema and other eruptive skin diseases as will Resinol Ointment, and in treating this disease, in children especially, you must stop the itching or give up the case. Resinol Ointment is equally essential and effective for the relief and cure of Pruritus Ani, and if caused by incipient hemorrhoids will usually abort them. The efficacy of this remedy in this trouble alone has earned it world-wide fame and made it indeed a boon to humanity.

Resinol Soap, containing in a modified form the same medication, should be used when bathing all cases. Its use for infants and children is most valuable as a prophylactic and hygienic measure. Its merit as a delightfully refreshing bath soap is recognized by discriminating persons of every nationality, especially those who appreciate a healthy Skin and Complexion.

Resinol Medicated Shaving Stick is also worthy of your attention and approval, and it also has had most flattering commendation from professional men. Its superior qualities are convincing, and, from a sanitary viewpoint, its utility obvious.

Doctor, we hope for our mutual interests' sake that you have not ignored these preparations, and if you desire us to send you samples, we will be glad to do so on request.

Thanking you in advance for the opportunity to serve you, we are

Yours very truly,

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P. S.—In writing for samples kindly mention this advertisement.

and 3 in colored persons. As to sex, 6 were male and 9 female. The youngest decedent was 2 months old, that of white male, duration of illness 4 days; the oldest was 54 years, that of white male, duration of illness 3 years. The briefest period of illness was 4 days; the longest 5 years, that of foreign female, aged 21 years.

Influenza.—Five deaths reported for April, as compared with 6 in March and 6 in April of 1909. Of these deaths, 4 were white Americans and 1 colored. As to sex, 2 were male and 3 female. The youngest decedent was 1 year, duration of illness 15 days; the oldest 72 years, that of white female, duration of illness 1 month. The briefest period of illness was 1 week, that of white male, aged 71 years; the longest period 6 months, that of white female, aged 67 years. All of these deaths were complicated with pneumonia.

Scarlet Fever.—One death and 13 cases of sickness reported for April, as compared with 1 death and 19 cases for March, and no deaths and 1 case of sickness for April of 1909. The death was that of white male, aged 21 years; duration of illness 3 weeks. The morbidity cases occurred in 12 white and 1 colored persons, 7 being male and 6 females. The youngest was 18 months; the oldest 19 years. The briefest period of illness was 24 hours; the longest 3 weeks.

Measles.—No deaths and 30 cases of sickness reported for April, as compared with no deaths and 9 cases for March, and no deaths and 101 cases of sickness for April of 1909. The morbidity cases all occurred in white persons, 14 being male and 16 female. The youngest was 8 months; the oldest 41 years. The briefest period of illness was 1 day; the longest 1 week. There was an epidemic of 24 cases at White Hall, in the seventh district.

Diphtheria.—No deaths and 5 cases of sickness reported for April, as compared with 1 death and 7 cases of sickness for March, and 1 death and 15 cases of sickness for April, 1909. All of the morbidity cases occurred in white persons, 4 being male and 1 female. The youngest was 5 years; the oldest 29 years. The briefest period of illness was 2 days; the longest 1 week.

Whooping-Cough.—There were 4 deaths and 5 cases of sickness reported for April, as compared with 1 death and 14 cases of sickness for March, and no deaths and 1 case of sickness for April, 1909. All of the decedents were white females. The youngest was 1 month, that of white female, duration of illness 3 weeks. The oldest was 2 years, duration of illness 2 weeks, this being the shortest duration of illness. The longest duration was 6 months, age of deceased 1 year. The immediate cause of 3 of these deaths was pneumonia. All of the morbidity cases occurred in white persons, there being two house epidemics, ages and duration of illness not given.

Chickenpox.—No deaths and no cases of sickness reported for April, as compared with no deaths and 5 cases for March, and no deaths and 2 cases of sickness for April of 1909.

Meningitis.—There were 3 deaths reported for April, 1 tubercular and 2 simple, as compared with 1 tubercular and 1 simple for March and 2 simple for April of 1909. Of these decedents, 2 occurred in white American-born persons and 1 in foreign-born persons; 2 were females and 1 male. The youngest was 2 days; the oldest 87 years. The briefest period of illness was 2 days; the longest 1 week.

Mumps.—Two cases of mumps reported for April, as compared

Probilin Pills

Obviate biliary infection and stagnation
Reduce swelling and spasm of the gall-ducts
Modify calculi and favor their expulsion.

Arhovin Capsules

Render the urine antibacterial, clear, acid
Lessen gonorrheal difficulties (tenesmus)
Diminish the occurrence of complications.

Anusol Suppositories

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Exert a tonic action on inflamed mucosae
Promote healing of the vascular structures.

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with 1 for March and 1 for April of 1909. Both were white females; ages, 5 and 9; duration, 1 and 2 days.

Erysipelas.—One death reported for April, as compared with no deaths for March and none for April of 1909, that of white male, aged 2 months; duration of illness 14 days.

Septicemia.—One death reported for April, that of white female, aged 16 years, duration of illness 8 days, as compared with 1 for March and 1 for April of 1909. There was also reported 1 death from Hodgkin's disease in connection with sepsis, that of white male, aged 47 years, duration 5 years, as compared with 1 death for March.

Spasmodic Croup.—One death reported from this cause, that of white female, aged 4 years, duration of illness 2 days, as compared with 1 death for March.

Typhoid Fever.—One death and 11 cases of sickness reported for April, as compared with 2 deaths and 9 cases of sickness for March, and no deaths and 2 cases of sickness for April, 1909. The death occurred in white male, aged 21 years, duration of illness 3 weeks. All of the cases of sickness occurred in white persons, 5 being males and 6 females. The oldest was 75 years; the youngest 2 years. The briefest period of illness was 5 days; the longest 4 weeks. There was an epidemic at "Mattfeldt's Hollow," Belvidere avenue, Mt. Washington, caused by water from an artesian well, which has been abandoned for drinking purposes.

BIRTHS REPORTED.

Male, 38; female, 37; white, 63; colored, 12; total 75.

DEATHS REPORTED.

Male.....	67	White American.....	109
Female.....	88	White Foreign.....	23
	—	Colored.....	23
	155		155

MISCELLANEOUS.

Houses disinfected.....	15	Nuisance complaints made..	18
Rooms disinfected.....	46	Nuisances abated.....	16
Water and milk analyzed..	1	Nuisances unabated.....	3

Respectfully submitted,

JAS. F. H. GORSUCH,
County Health Officer.

Mt. Washington, Baltimore, Md., June 14, 1910.

Maryland Medical Journal, Baltimore, Md.:

Gentlemen—Viewed in the light of the discussions of medical education and medical colleges of today, the resolutions offered by Dr. Joel Hopkins at the first meeting of the American Medical Association, held in Baltimore May 2, 1848, are interesting.

I enclose a sketch of Dr. Hopkins' life written in October, 1904, in which I have included these resolutions. Perhaps you may find use for them in your JOURNAL.

Yours truly,

WILLIAM J. TODD.

The resolutions were as follows:

"In order to promote the high purposes of this Association, and give practical efficiency to its recommendations, it is hereby

"Resolved, That a College or Bureau of Examiners be instituted, to consist of the President and officers, ex-officio, and seven of its members, to be chosen annually, and that they be invested with power to confer diplomas

Feeding of Infants in Diarrhoea

MELLIN'S FOOD

2 level tablespoonfuls

WATER

8 fluidounces

Analysis of above mixture:

Fat	trace
Proteids (cereal)	.56
Carbohydrates (no starch)	4.33
Salts	.23
Water	94.88
	100.00

Calories per fluidounce=6.2

To be given cold or very warm, (never lukewarm) in small amounts, frequently repeated for a day or more, or until stools lessen in number and improve in character.

Then milk may be added in small quantities until full diet is reached.

We cannot emphasize too strongly the benefit of such a diet in all forms of Summer diarrhoea.

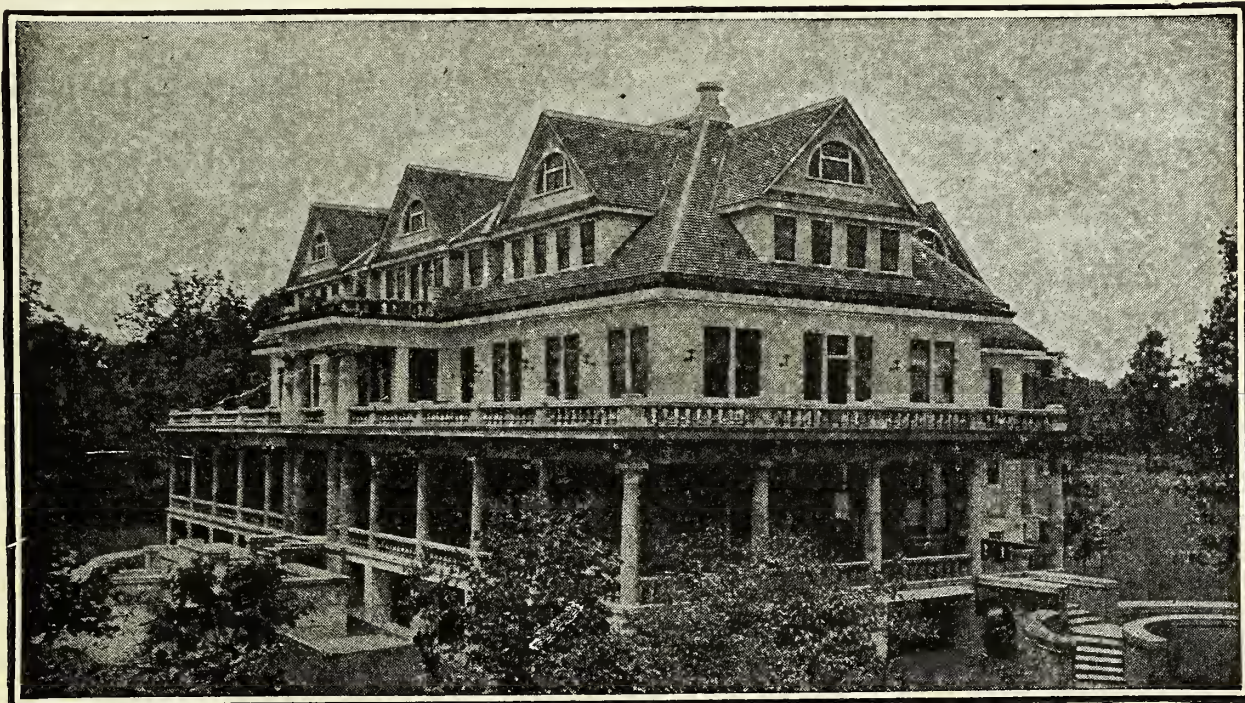
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on such persons as may apply for the same; provided they sustain satisfactory examinations in all those departments of Literature and Science which may be deemed by the said Board necessary to belong to an accomplished physician.

"Resolved, That those diplomas may be of two grades: First, that of Bachelor of Medicine, to be conferred on those who may be found to possess the lowest standard of qualifications contemplated by this Association as essential; and, second, that of Doctor of Medicine on those who may have previously obtained the degree of A. M. from some accredited College, or who can sustain an examination that would entitle them thereto.

"Resolved, That the fee to be required therefor shall not be more than sufficient to defray the cost of procuring and preparing the same." (Transactions of the American Medical Association, vol. I, folio 43.)—*Maryland Journal, Towson, Md., Feb. 11, 1905.*

Editorial Comment.

THE FUNCTIONS OF THE THYMUS GLAND.

[*Medical Record.*]

TO THE majority of medical men the chief, if not the only, function of the thymus gland appears to be that of scapegoat for all cases of sudden death under anesthesia, an opinion which receives but little enlightenment from a consultation of the standard textbooks of physiology, in which the articles upon the subject are vague in the extreme. During the past few years, however, a number of experimenters have been investigating this little-known organ, and some have drawn some definite, though not unfrequently contradictory, conclusions as to the part which it plays in the regulation of the animal organism. In the *Berliner klinische Wochenschrift* for May 2, 1910, Hart and Nordmann report a long series of painstaking and elaborate researches into this subject, which have led them to the opinion that the thymus gland may be an important, and possibly an essential, organ in the life-history of the animals.

By developing a careful technique they have succeeded in completely extirpating the gland from a large number of young puppies, in each case an entire litter being used, part for the extirpation operation, and part for controls. The most striking result obtained was that, though the puppies stood the operation well and recovered quickly from its immediate effects, in no instance did an animal live longer than a year afterwards. The effect of the removal of the thymus gland upon the general condition of the animal appeared to be to inhibit its power of making proper use of its food. Though kept in the best of hygiene conditions, and given plenty of good food to satisfy the inordinately voracious appetite which they developed, the dogs did not develop as did their normal brothers; they were distinctly below the average weight and their muscles were flabby and soft; they tired easily, and showed no inclination to romp and play as does the healthy puppy. Signs of rickets which have been reported by other observers were not present, the bones being quite normal and the backwardness being confined to the soft parts.

Some distinct correlation between the action of the thymus and the other ductless glands was suggested by the experiments. That with the generative organs was shown by loss of all sexual instincts in the dogs, by sterility, and by atrophic changes in the testes and ovaries. The antagonistic relation of the thymus to the adrenals was indicated by a hyperemia of the latter, and a constant arterial hypertension in the animals from which the thymus had been re-

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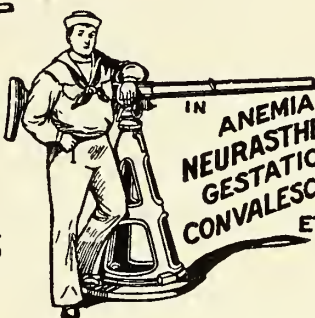
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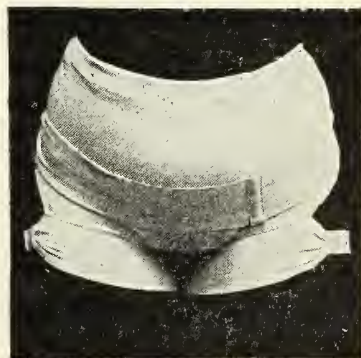
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MAN'S BELT—FRONT VIEW

moved. The combined action of the lowered nutritional power of the muscles and the increased blood pressure was marked in the effect upon the heart, while the increased resistance caused marked cardiac dilatation, the lowered nutrition prevented compensatory hypertrophy, and in practically every case the dogs died from paralysis of the overdistended flabby heart. The power of the animals to combat infection also seem to be greatly reduced. This was especially pronounced in the lowered resistance to pyogenic infections of the skin, successive crops of boils appearing, showing very sluggish powers of healing, and recurring quickly in nearly all of the thymectomized dogs, while the normal control animals, occupying the same kennels, were not attacked.

These experiments, when coupled to our anatomical knowledge of the large size of the thymus gland in infancy, and its gradual decrease and almost disappearance at or near puberty, suggest that the organ has an important function in regulating not only the bodily, but the sexual growth of the young animal. The uniformity of the symptoms produced by total extirpation of the thymus, and their complete absence whenever intentionally or by accident even a small fragment of the gland remained, rules out the possibility of the results being due to the general manipulation of the operation, and makes it appear probable that the internal section of the thymus gland is as vital to the animal organism as that of the thyroid and the other ductless glands.

DR. RICKETTS A MARTYR TO SCIENCE.

[*The Journal of the American Medical Association.*]

As we go to press, notice reaches us of the death of Dr. Howard Taylor Ricketts, at Mexico City, from typhus fever, a disease which he was at the time engaged in investigating. Dr. Ricketts was one of the foremost research investigators of this century; his researches on blastomycosis, his study of the Rocky mountain fever, which occupied several summers in Montana, and his most recent work on typhus fever, have made his name known and honored throughout the scientific world. Some of this work has been done under grants from the Committee on Scientific Research of the American Medical Association, and for many years he has been a valued editorial writer on the *Journal*. Since his graduation in medicine, in 1897, Dr. Ricketts has been an investigator and teacher. He was associate professor of pathology in the University of Chicago, and recently had been made professor of pathology in the University of Pennsylvania, a position which he accepted with the proviso that he was to be free during the winter, spring and coming summer to pursue his research work on typhus fever in Mexico. His untimely death is due indirectly to his insatiable desire for work, as he was almost worn out from overwork before he went to Mexico. Dr. Ricketts was modest and unassuming in demeanor, earnest and sincere in all his dealings, and his fine character endeared him to all who were privileged to know him. His work was for humanity, and his death is a loss to the world of science.

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THE IMPORTANCE OF THE EUGENIC MOVEMENT AND ITS RELATION TO SOCIAL HYGIENE *

By Lewellys F. Barker, M.D.,

Professor of Medicine in Johns Hopkins University and Physician-in-Chief
to Johns Hopkins Hospital, Baltimore.

"Like leaves on trees the race of man is found,
Now green in youth, now withering on the ground;
Another race the following spring supplies
They fall successive and successive rise."

IF it be true that the whole human race gets a fresh start at least thrice every hundred years; that the kind of race in existence in any period depends on the quality of the children born and the influences to which they are exposed after birth; that the supreme reason for marriage is parenthood; that the quality of children born depends (1) on the elements inherent in the germ-cells of the parents, and (2) on the environment of those germ-cells before their union and also after their fusion to form a new being; that a critical study of the relatives of a prospective parent will give valuable evidence regarding the nature of the elements—good, bad and indifferent— inherent in his or her germ-cells and likely to be transmitted; that poisons like alcohol, lead, or the toxins of syphilis circulating in the blood of either parent before a germ-cell union, or and more especially, in the blood of a mother before the birth of her child, may make the offspring the victim of malformation, infantilism, mental defect or epilepsy—if these things be true I think it probable that it would be possible and wise to interest young and marriageable people in the facts, and to a certain extent consciously to direct selection by marriage, and further, consciously to protect from injury germ-cells which possibly may fuse, or have already united to form a new human being.

CREATE PUBLIC OPINION.

If it be true that the quality of human beings born depends on the inherent qualities of the germ-cells of the parents and their environment before and after fusion, may it not be possible by edu-

*Read before the Maryland Society of Social Hygiene, April 19, 1910.

cation to cultivate a public opinion that will lead families to show as much pride in making provision for characteristics of health, energy, ability, courage and courtesy in their posterity as some of them now evince in their ancestry? May not family sentiment be developed in the direction of suppressing parenthood in the racially unworthy and of facilitating fatherhood and motherhood for those who are able to transmit to their offspring desirable qualities unhampered by glaring defect? In the words of Zarathustra, may we not say to the family: "In the future let not your pride be whence ye have come, but whither ye go."

If it be true that those born deaf and dumb, or feeble-minded, or with an insane or epileptic tendency, or color-blind, are likely to propagate their kind; and if it be true that the chronic inebriate, the prostitute, the drug habitué and the habitual criminal are, as a rule, such, because of the nervous systems they have inherited, and that they are likely to transmit defective nervous systems to their offspring, it would be desirable to educate public opinion, not only to discountenancing, but actually to legislative prohibition of parenthood for individuals so afflicted.

THE FIT AND THE UNFIT.

If it be true that the decline and fall of nations following from no apparent external causes is really explicable through "the relative fertility of the fitter and unfitter elements combined with what we now know of the laws of inheritance;" if it be a fact that the success of a people usually leads to a cessation of natural selection within that people, and hence is often followed by survival of the worse; if we can be convinced that by applying scientific knowledge it would be possible to stem racial decadence and determine a racial ascent, surely there could be no more laudable, patriotic movement than one which will help a nation in its struggle by seeing to it that the children of that nation have their origin in the fusion of the better germ-cells available, and that those germ-cells and those children are protected from the injury which results from under-nourishment or from the action of such racial poisons as alcohol, lead, and the toxins produced by infectious agents. We do not have to look far afield to observe that certain of the civilizations in existence today are trying to apply every scrap of biologic knowledge which they believe will help them in the struggle; woe be to the societies and nations which fail to apply this new knowledge as it accumulates; the fate of such negligent or non-compliant communities is sealed; they are making no proper effort to postpone the time when they will be "one with Ninevah and Tyre."

If it be true that as the human race advances and the range of intellect widens, the tendency is to work for the future of humanity as well as for its present good; if, from the time of Plato to our day, the best minds have cherished the idea of a more perfect state, and have urged the suppression of human baseness and the creation and the appreciation of a "super-man;" if modern science has placed in our hands the key which unlocks the box containing the

secret of race-ennoblement, namely, the picking out by preference of the racially superior for parenthood combined with the protection of childhood and the support of maternal care by fatherhood—if these be facts, then the phenomena of sex may ultimately come to be regarded by more people with awe; parenthood will be looked on as the noblest and most sacred of functions, entailing the heaviest responsibilities, and “the science which deals with all the influences that improve the inborn qualities of a race” (Mr. Francis Galton’s definition of eugenics), will become a constituent of the higher human religions.

EUGENICS.

The science which has for its object the prevention of the birth of the unfit and undesirable, and the improvement of the race by furthering the productivity of the fit and the desirable by early marriages and by healthful rearing of children, has been called by Mr. Francis Galton, whose life has been devoted to a campaign in favor of it, the science of eugenics. Whereas, natural selection depends on overproduction and wholesale destruction, the aim of eugenics is to see that no more children are born than can be properly cared for and to make sure that those born come of the best stock. This science assumes that it is possible to improve the race by the application of the newer knowledge which modern studies of heredity and environment have yielded.

Until recently young people approaching marriage have had no way of obtaining definite information concerning fit and unfit matings, and many of them have never been taught to consider whether or not a proposed marriage would lead to the birth of children with healthy bodies and sound and able minds. Students of heredity and of hygiene are now making the effort to supply the much-needed information, and we must be grateful for the various publications which have recently attempted to present in a popular way the existing state of our knowledge concerning these vital matters. For those who wish to begin a course of reading along eugenic lines I would recommend:

C. W. Saleeby: “Parenthood and Race Culture: An Outline of Eugenics” (New York, 1909).

W. Bateson: “Methods and Scope of Genetics” (Cambridge, 1908) and his “Mendel’s Principles of Heredity” (Cambridge, 1909).

T. H. Morgan’s “Experimental Zoology” (New York, 1907).

C. B. Davenport: “Eugenics: The Science of Human Improvement by Better Breeding” (New York, 1910).

Karl Pearson: “National Life from the Standpoint of Science” (Edinburgh, 1905).

R. R. Rentoul: “Race Culture or Race Suicide” (Edinburgh, 1906).

In the first book mentioned references will be found to the more technical sources, including J. A. Thompson’s *Heredity*, Francis Galton’s publications, Westermarck’s “*History of Human Marriage*” and Forel’s “*The Sexual Question*.”

PUBLIC INTEREST IN EUGENICS.

There is now in existence in England a Eugenics Education Society, and the publication of a *Eugenic Review* has been begun. In this country the American Breeders' Association has organized a Committee on Eugenics for purposes of investigation, education and legislation. In Germany there is an excellent journal called the *Archiv für Rassen-und Gesellschafts-Biologie*. It seems probable that eugenic societies, eugenic committees and eugenic publications will rapidly multiply, and it is not at all improbable that wise philanthropists, seeing that the millions of dollars now used for caring for the weak and defective help only one generation, will soon be induced to provide large sums for eugenics, with the idea of preventing the production of the imbecile, the insane, the inebriate and the criminal.

MENDELIAN LAWS.

My purpose now is not to dwell at any length on studies in heredity or the various theories which have been devised to interpret its phenomena. There have been, however, certain developments in the study of heredity to which as yet popular attention has been insufficiently drawn; I mean the rules regarding inheritance which have resulted from the experimental studies begun by the Abbot Gregor Mendel in the cloister garden at Brünn about a half-century ago. For a time it seemed possible that these studies held good more particularly for the life of plants and of lower animals, but of late there has been a rapid accumulation of evidence which makes it seem certain that the Mendelian rules are also valid, at any rate to a large extent, for the higher animals and man. It now seems probable that inquiries into the physiology of heredity and variation will progress largely by the application of experimental methods similar to those which grew out of Mendel's discovery.

For a long time it has been known that most animals and plants begin life by the union of two cells, the one male, the other female. Biologists describing those cells call them gametes; that is, germ-cells, or marrying-cells. These germ-cells contain in some way or another the factors on which all the powers, both physical and mental, possessed by the living creature to which they give rise, depend. It was Mendel who first appreciated the full consequences of the double nature of each individual being, due to the fact that two cells are concerned in its production. To understand the facts of heredity it will no longer do to think of a boy or a bee or a beech tree as each being one thing, but one must think of each of them as being two things, indeed, as being double in composition throughout.

It is no uncommon experience to see the attempt made in families to analyze each individual into the aggregations or mixtures of parental characteristics manifest in them, to recognize, for example, the mother's voice, the father's passion for music, the mother's eye or the father's bony framework. But scientific students of heredity teach us that such an analysis, while true, since the various

characters are transmitted independently, misses the most important point, namely, that in each of his qualities an individual is double. To understand really the make-up of an individual it is necessary to know how each of the two original germ-cells which united to give rise to him was endowed, as regards the factors concerned in voice, skeleton, musical faculty, color, hair and other characteristics. In analyzing the inheritance of a human being, therefore, we have to consider the contribution of each of his parental germ-cells separately for each quality or faculty; in other words, it is not sufficient to make a single column of values for the ingredients that go to form a man, but, as Bateson suggests, we must rule two columns, one for the ovum from the mother and one for the sperm-cell from the father, and in each column we must indicate how that germ-cell was supplied in respect to each of the ingredients in the list. Now, it will be clear that the male and female germ-cells may make the same or different contributions as regards any of the ingredients. When the two cells yield the same contribution the organism which results is said to be *pure-bred* for that ingredient; on the other hand, when the contribution from the two parent cells is dissimilar, the organism which results is said to be *cross-bred*. This is one of the most important conclusions to which studies of heredity has led.

From what I have said it will be clear that an individual, according to our present views of heredity, is made up of a large number of distinct ingredients or units contributed from two sources, and that as regards any one of these units he may have inherited two similar portions or two dissimilar portions.

To proceed with the analysis, I think I cannot do better than adopt an illustration used by Bateson in his popular address. He imagines the contents of a germ-cell as a fluid, made by taking a drop from each of a definite number of bottles in a chest containing tinctures of the several ingredients. Thus the male germ-cell is supposed to be compounded from one chest of bottles and the female germ-cell from a corresponding set of bottles in a similar chest. Should one or more of the bottles be empty in either chest, then the germ-cell receives no ingredient from that chest; if corresponding bottles should be empty in both chests, then neither germ-cell contains the ingredient concerned, and the new individual resulting from the union of the two germ-cells by mixing the two collections of drops together would not contain the missing ingredient at all. It is obvious that an individual may be *pure-bred* (that is to say, similar on both sides of his composition) for any particular ingredient in either one of two ways: He may have received the ingredient from both the male and the female chest, or he may have received it from neither. Again, he may be *cross-bred* in respect of any single ingredient or unit, receiving the presence of it from one germ-cell and the absence of it from the other.

Having got this far, we can now conceive of the individual as composed of what are called presences and absences of all the possible ingredients. Hurst's studies of the eyes of parents and chil-

dren happily illustrate this point. It appears that people have blue eyes when a factor or unit which forms pigment on the front of the iris is absent. If both parents of a child have blue eyes the children will not have dark eyes, for a dark eye has been shown to be due to either a single or a double dose of the unit missing from the blue eye. This is why dark-eyed persons may have children who are all dark-eyed or who are dark-eyed and light-eyed in certain proportions which, on the average, are definite.

The long hair in angora cats or in guinea-pigs seems to be due, not to a factor added to short hair, but rather to the absence of a unit which stops growth in short-haired animals.

It is too early as yet to offer any opinion as to the actual nature of the factors we are now talking about. Some time we may know really what they are, but as yet we are in ignorance.

PRINCIPLE OF SEGREGATION OF UNITS.

Having described the formation of an individual from units brought into him by the two germ-cells derived from his parents, we may now turn to an examination of the mode of formation of the germ-cells which are formed in him himself and which will be concerned in his contribution to his children should he have them. It will be interesting to see how the various ingredients of which he himself was originally compounded are distributed among the germ-cells which are budded off from him. The observations which have been made teach that except for rare variations the germ-cells formed from him are all alike in respect of those units of which he is pure-bred. This might have perhaps been expected, but the constitution of his germ-cells in respect of the units of which he is cross-bred—I mean those units which he received from the germ-cell of one parent and not from that of the other—could scarcely have been foreseen. In the cases thus far studied experimentally in animals and plants some of the germ-cells from such individuals contain a representation of the unit and others do not, just as the parent germ-cells did or did not contain it. This fact, known as the principle of segregation of units (or determiners), is the most important discovery made by Mendel.

We now see that if a certain unit were brought in by both parent germ-cells, then all the daughter germ-cells have it; if it did not come in through either parent germ-cell, then no daughter germ-cell will have it; if it came in through one parent germ-cell and not through the other, then about half the daughter germ-cells will have it and about half of them will not. In other words, the individual made by the mixing of tinctures from two chests of bottles sorts the tinctures back again into a double row of bottles, a pair corresponding to each ingredient or unit, and each of the germ-cells budded off from him receives a drop from one or other bottle of each pair. This is what is known as the purity of germ-cells. "They are pure in the possession of an ingredient or in not possessing it; and the ingredients or factors, as we generally call them, are units because they are so treated in the process of formation of

the new gametes and because they come out of the process of segregation in the same condition as they went in before fertilization.” (Bateson.)

TYPES LIMITED.

Two given parents can therefore produce only a limited number of types of offspring; the relative numbers of the types thus produced by recombinations of the parental units can often be predicted according to simple mathematical rules.

If we could know the unit characteristics which both parents possess as well as those which they both lack, and also the unit characters in which they differ, and if we further knew for each characteristic whether it was due to a presence or an absence, we could go far toward predicting the result of a particular marriage. Of course, we are as yet only on the threshold of such knowledge. It is often very difficult to tell whether a parent possesses a given factor or not, but for some characters it is quite easy and can be told at once, since there are factors which cannot be present in an individual without manifesting their presence. In some families, for example, a certain number of the members are affected by night-blindness. If an individual affected marries one unaffected, their children will be partly affected and partly unaffected, but their unaffected children in turn, not containing the unit responsible for night-blindness, cannot pass it on.

COMPLEMENTARY UNITS.

Through the study of pedigrees, but more particularly through experimental studies, our knowledge of Mendelian heredity is slowly progressing, and very astonishing answers are being obtained to the questions which scientists are putting to nature.

Certain bodily characteristics seem to depend, not on a single ingredient or factor, but on the combined activities of several factors—the so-called complementary units. Thus in mice, if only one color factor is present the fur is chocolate; if another factor in the series be added the fur becomes black, and if a third factor concurrently act, the fur has the brownish-gray color of the common wild mouse.

INTERACTIONS AND REPULSIONS.

Students of heredity have also found that units of different nature sometimes interact with one another during cell divisions. There seem to be, for example, mutual repulsions among Mendelian units, and if an individual is cross-bred in respect of two repelling factors, that is, if he has received only a single dose of each, then the germ-cells budded off from him are so composed that each contains one or other of the two repelling factors, not both. This fact has been beautifully demonstrated by the studies of Bateson and Punnett on the hybridization of sweet peas.

HEREDITY AND DISEASE.

Observations on human beings show the importance of studies of heredity not only for the understanding of normal life, but for obtaining an insight into the prevalence of abnormalities and of disease. In some families the hands have short fingers, each digit having only two instead of three phalanges.¹ The abnormality appears to be due to the presence of a Mendelian unit which inhibits the normal process of growth in the fingers. A short-fingered person married to a normal person will have children all or half of whom are short fingered; should two individuals, however, even though derived from short-fingered strains, be themselves free from short fingers, their child will be normal. The same rule in all probability applies to diabetes insipidus.

Sometimes an abnormality or a disease is due to the absence of a Mendelian unit rather than to an abnormal presence. In some families the lining membrane of the eye undergoes a pigmentary form of degeneration. Here not only members of the family affected with the disease may transmit the disease to offspring, but even those with good eyes may have children suffering from the pathologic change. The same is true of deaf-mutism. In the disease of the eye just spoken of and in deaf-mutism, it is exceedingly dangerous for an affected person to marry a blood relative even if that relative does not suffer from the same defect.

IMBECILITY.

Imbecility, in certain of its forms, appears to be due to the absence of some definite, simple factor. If two imbeciles marry, even though they be unrelated to one another, the offspring are all imbeciles. I need only refer to Barr's case in which an imbecile of 38 married a delicate wife, and 20 years later was the father of 19 defective children. Davenport states that he can find no case on record in which two imbecile parents have produced a normal child, and yet thousands of children are born every year in this country of imbecile parents. One can only think it will not be long, in view of this, before imbeciles will be restrained from reproducing their kind. The family of hereditary ataxics studied by Dr. Sanger Brown, the brains of two members of which I have studied and made a report on, illustrates well the baneful propagation of a bad stock.²

If time permitted statistics could be given regarding the insane, the epileptic, the chronic inebriate and the habitual criminal which would convince anyone that such persons should never become parents, and would cause to be initiated a movement to awaken public opinion and legislative action in these matters.³

RESISTANCE TO DISEASE.

While studies of heredity show us the direction in which we must work on the negative side, they are also full of promise on the positive side. One of the most fascinating investigations with which I am familiar is that of Biffen⁴ which led to the demonstra-

tion that the power to resist a disease may depend on the presence in a germ-cell of one of the simple Mendelian units to which I have been referring. It has long been known that certain kinds of wheat are very susceptible to a disease known as wheat-rust, which is due to an infection with a fungus. Certain other varieties of wheat are immune to this rust disease. If an immune strain be crossed with one which is not immune, the resulting hybrids are all susceptible to rust, but when such hybrids are permitted to undergo self-fertilization they yield seeds from which appear susceptible and immune plants in the ratio of 3:1. This little experiment gives an entirely new and precise significance to what we have hitherto designated as resistance to disease; it is conceivable that a field of research has here been opened up which may yield results of great practical as well as theoretical value. It is quite conceivable that what has been found to be true in this case may turn out to be true of resistance to many other diseases in both plants and animals, and who knows but that before long the attention of medical science will be turned less than at present toward modes of infection and more than now toward the breeding of a race with heightened resistances? Indeed, it seems now far from being impossible "that liability to a disease or the power of resisting its attack, addiction to a particular vice or to superstition," may be found to be "due to the presence or absence of a specific ingredient, and that these ingredients are transmitted to the offspring according to definite predicable rules."

APPLICATION OF EUGENICS TO RACE CULTURE.

The science of eugenics aims to make use of all these newer facts of heredity, as well as those resulting from statistical or biometric inquiries, and to apply them in race culture. It will not, however, neglect the very important influence of environment, and must pay especial attention to the rôle of racial poisons like alcohol, lead and the toxins of syphilis. Time will not permit me to dwell on the obstacles in the way of eugenic progress, nor can I even refer to all the methods proposed by those who harbor the eugenic ideal. It seems to me important, however, to point out that certain of the methods recommended by enthusiasts for the improvement of the race would, if resorted to, be likely to be more harmful than useful. It seems to me probable that the new facts of heredity may be applied best through the utilization of the institution of marriage. I do not think it probable that any method incompatible with marriage, with the love of the sexes, or with the care of the children chiefly by their own parents, will be adopted at any rate in the near future. The suggestions of Plato, of Malthus, of Spencer and of Nietzsche, though important in certain directions, were all fallacious in others. It is highly probable that some of the views most generally held today will not bear the test of time, but, despite

this, we have enough certain knowledge to permit us to do much toward the elevation of mankind by eugenic methods. Though the birth rate is decreasing, the population of the world is increasing. Though one-third of the infants born die within five years, great strides are being made in the prevention of infant mortality. It is not necessary to foster infant mortality in the hope of removing the unfit. It is much more important to prevent the birth of the unfit. By understanding Nature, and obeying her, we shall learn to command her. Most of the illegitimate children now born die soon after birth. The majority of undesirable citizens do not propagate their kind, even under our present social arrangements. Selection by marriage, faulty as it is, has, on the whole, favored the improvement of the race. Women are becoming freer to choose husbands than ever before, and social opinion regarding the length of time of engagements and the prevention of unfit matings is becoming ever more enlightened. It might be advantageous if women especially suited for motherhood were made financially independent by the State. So-called codes of honor, found to be wrong, are being abandoned. More and more provision is being made for the permanent detention of inebriates, insane, the feeble-minded and criminals; parenthood will be more and more prevented among these degenerate individuals by permanent detention, or, possibly, as has been seriously recommended and practiced by some, by surgical or X-ray sterilization. Young people are being educated better than before as to the significance of sex and the responsibility of parenthood, of the dangers of racial poisons, and especially of the risks of venereal disease. With the help of the Wassermann reaction it is now possible to find out whether an individual who has once had syphilis has been sufficiently treated to prevent his transmission of the disease to a conjugal partner or a child.

HEREDITY NOT A BUBBLE.

One fact is outstanding—heredity is *not* a “mere bubble to be pricked,” despite the cleverness of Mr. Bernard Shaw. Through our knowledge of its laws we shall be able to progress toward the better part of the ideal of Nietzsche, who longed for the highest perfection of man. As a practical advisor for the attainment of this perfection Nietzsche may not have been wise, but no one could have had a higher aim. Thus spake Zarathustra: “Hitherto all things have brought forth something better than themselves. Are you going to be the ebb of this great tide? Man is something that is to be surpassed. Thou, the victorious one, the self-subduer, the commander of thy senses, thou who shalt build better than thyself. But thou must thyself be built square in body and soul. Thou shalt create a higher body, a prime motor, a self-rolling wheel; thou shalt create a creator.”⁵ Similar views have been expressed

by one of the greatest of our American poets. What could be more eugenic than this striking passage?

Lead the present with friendly hand towards the future—
 Bravos to all impulses sending sane children to the next age!
 But damn that which spends itself with no thought of the stain, pain,
 dismay, feebleness, it is bequeathing!
 I see tremendous entrances and exits, new combinations, the solidarity of
 races—
 Always a nonchalant breed, slightly emerging, appears on the streets,
 Arouse, for you must justify me!
 Not today is to justify me and answer what I am for,
 But you, a new brood greater than before known
 Great idea, idea of perfect and free individuals!

EUGENICS SHOULD BE STUDIED.

Fragmentary has been this presentation; I trust that it may stimulate thought regarding the eugenic ideal; I hope that the subject will be studied, and that people may become instructed in it. In becoming thorough eugenists, we shall act in accordance with the highest aims and purposes of all persons interested in true social hygiene. Though the old doctrine of predestination gets new support from the recent studies, these studies also teach us how mankind can control its destiny. It will be absolutely necessary to attack the problems of (1) the improvement of races and families, and (2) the extinction of hereditary disease in the one single way in which permanent betterment is possible. We must more consciously control the union of germ-cell qualities, and we can do this by creating new sentiments regarding marriage and parenthood. In these problems lie, it seems to me, the most important and the most difficult tasks now confronting families, nations and the human race!

1035 North Calvert street.

¹Cf. Farabee, W. C., "Inheritance of Digital Malformations in Man," Cambridge, 1905; Walker, G., "Remarkable Cases of Hereditary Anchyloses or Absence of Various Phalangeal Joints, etc.," *Bull. Johns Hopkins Hosp.*, 1901, XII, and Drinkwater, H., "An Account of a Brachydactylous Family," *Proc. Roy. Soc., Edinburgh*, 1908, 35.

²Barker, L. F., "Description of Brain and Spinal Cord in Hereditary Ataxia," *Decennial Publications*, University of Chicago, 1903.

³Cf. Bateson, W., "An Address on Mendelian Heredity and Its Application to Man," *Brain*, 1906, XXIX, 157.

⁴Biffen, R. H., "Studies in the Inheritance of Disease—Resistance," *Jour. Agric. Soc., Cambr.*, 1907, II, 109.

⁵Mügge, M. A., "Friedrich Nietzsche: His Life and Work," London, 1908.

THE ADVANTAGES OF OPERATIONS FOR THE CURE OF HERNIA.

By *Alexius McGlannan, M.D.*

Baltimore.

It is a generally accepted fact that the ideal method of dealing with a hernia is by operation. However, on account of the rather large number of otherwise healthy people who have an inguinal hernia and spend years in a state of at least partial disability, it seems wise to call attention to the character of the operation for the cure of hernia and to some of its great advantages over other forms of treatment.

The non-operative treatment is limited to the proper fitting of a truss. The various injection methods of treatment are indefensible. These irritant liquids set up a plastic inflammation which is always liable to injure the cord, and may include the bowel in its resolution. When the patient escapes these dangers he is still far from a certain cure, because the plug of scar tissue is very likely to give way and stretch under pressure. This fact was recognized long ago and was the cause of failure in the McEwen operation.

The art of truss fitting is not a common accomplishment among medical men. The fitting is usually done by the instrument maker without any supervision. A properly applied truss is rarely seen. Most men wear the pad over the external ring, thus allowing the bowel to slip into the inguinal canal, where it becomes subject to strangulation and other traumatisms, at the same time making the size of the hernia greater. In other cases the truss presses on the pubic bone, compresses the cord, and in this way leads to varicocele and atrophy of the testicles. A large hernia will require the wearing of a truss both night and day. "The one that is *exactly suited* for the *day* is *entirely unsuited* for the *night*, and the reverse holds equally true." (De Garmo.)

Even the best-fitting truss is uncomfortable to wear, and therefore we find patients leaving off this apparatus whenever any excuse to do so is offered. Strangulation is the common result, and then an emergency operation is the only alternative. All the risks are now intensified and many of the certain advantages of the elective operation are lost.

Against these disadvantages and dangers we must measure those of the elective operation. First of all, the probability of permanent cure after operation is important. This is practically certain. The recurrence of a hernia after proper operation is extremely rare. De Garmo had 19 recurrences in a series of 1411 operations, including 45 strangulated hernias. The mortality following elective operation is so slight that it is negligible. With strangulation an appreciable mortality comes in at once; the toxemia of obstruction and the occasional enterostomy and other additional operations increase the danger. It is our belief, therefore, that any patient whose general condition is such that any operation is justifiable should be operated upon for the cure of hernia before strangulation makes this imperative. The danger

incident to the operation is much less than the risks and inconveniences of the non-operative treatment. An untreated hernia is of course a most serious menace to its unfortunate possessor.

We prefer to do hernia operations as elective procedures after careful study and preparation of the patient. This preliminary study includes a general investigation of the condition of the lungs, organs of circulation and the kidneys. Deficiency in the function of any of these organs does not contraindicate operation, but leads us to take certain precautions in the preparation of the patient, the choice of the anesthetic and the after-care.

The Preparation of the Patient.—This will require varying lengths of time. With an otherwise healthy individual the bowels are thoroughly emptied by means of a purgative and enemas given 24 and 12 hours before operation. The diet is restricted to liquids without milk during this time, and the patient is encouraged to drink a large amount of water. It is better to have him spend this day in bed and practice the use of the bed pan and urinal in the recumbent position. Fat people are given several days in bed on restricted diet. Buttermilk diet with little carbohydrate is best.

The urine must be studied for evidence of acidosis. Should this occur, alkalies are given until it disappears. Kidney insufficiency is a serious matter, which must be studied with care. When the routine examination of the urine shows any evidence of severe disease of the kidneys, one of the colorimetric functional tests should be employed. The phenolsulphonphthalein method of Geraghty and Roundtree seems the best of those described.

In the presence of evidence of serious functional disturbance of the kidneys operation must be postponed. We have found the use of cream of tartar lemonade in large quantities a valuable means for stimulating the kidneys. In the case of men who are accustomed to rich food and alcohol this preliminary treatment of the kidneys is always necessary without regard to the condition of the urine.

Circulatory disturbances may require long and careful preliminary treatment. Alkaline waters, sparse diet with complete emptying of the bowels, and as far as possible the disinfection of the intestinal tract, are required when sclerosis is present.

Myocardial and endocardial lesions, if severe, so limit the activities of the patient that the truss treatment is sufficient for the relief of the hernia. When the patient's heart allows him to be active its condition is not a bar to operation.

Chronic lung disease may become an urgent cause for operation for hernia. Severe coughing may cause strangulation. Anodynes should be given before and after the operation in order to limit the amount of coughing, and a local anesthetic or nitrous oxide should be used.

Anesthetic.—Hernia operations may be performed in the most satisfactory manner with local anesthesia under certain conditions. A large hernia that has stretched the tissues of the abdominal wall makes the suture easy, while a small hernia may give some

difficulty on account of rigidity of the muscles. Children and nervous or frightened adults, however, cannot be managed, and so a successful operation cannot be done. Strangulated hernia is best done under local anesthesia.

Morphine, one-sixth grain, and atropine, one-one-hundred-and-fiftieth grain, are given hypodermically as soon as the patient reaches the operating-room, before his skin is prepared.

Nitrous Oxide-oxygen.—This is rapidly becoming the favorite anesthetic for most operations. The principal obstacle to its general use is the expense. An hour's anesthesia requires about \$5 worth of gas. Occasionally the muscles do not relax, but in such cases a little ether may be added at the time of making the suture. Patients come out of this anesthesia almost simultaneously with the end of its administration, and the nausea and other disagreeable effects of ether are absent. This gas anesthesia is the method required whenever there is disturbance of kidney, lung or circulatory function.

Ether by the open drop method is still the simplest and most generally accepted method of anesthesia in uncomplicated cases. If the patient has been well prepared there is little or no post-anesthetic distress.

The Operation.—The present-day operation is the result of years of experience and experiment. The bad results and failures of many methods have been eliminated, until now we operate on an inguinal hernia with a confident expectation of permanent cure without complications. After the operation the abdominal wall is not only made as good as normal, but even stronger. The principle is a good muscle suture after caring for the sac.

The canal is opened through a skin incision beginning about 3 cm. above the line of Poupart's ligament, about 4 cm. from the anterior superior spine. This incision is carried to a point over the pubic spine and down to the aponeurosis of the external oblique. This aponeurosis is exposed until Poupart's and the external ring are well uncovered. The canal is now opened by cutting the aponeurosis in the line of its fibers. The lower flap is dissected back to show the shelving portion of Poupart's ligament, and the upper flap until the sheath of the rectus comes into view. As soon as the canal is opened the cord is exposed and the ileo-inguinal nerve is seen on its surface. The isolation of the nerve is an essential point in a cocaine operation. The preliminary steps can be done under infiltration, but further procedure requires that this nerve be blocked by injecting cocaine into its sheath at the upper part of the wound.

The sac is now picked up and separated from the cord by careful dissection with a sharp knife. The vessels are not disturbed any more than is necessary, and the vas with its artery and veins should not be handled. When the veins are large or varicose they are excised after careful separation and ligation. Rough handling of the cord is responsible for the elephantiasis of the scrotum and the atrophy of the testicle following hernia operations. The sac may be opened either before or after this separation is com-

plete. After any adhesions within the sac have been divided the neck is transfixed and closed and the lower portion removed. The stump of the sac is drawn up under the internal oblique by means of a suture passed through this muscle from its under surface about 2 cm. above the internal ring. This maneuver comes from Kocher, and is intended to so alter the direction of the funnel-like intra-abdominal surface of the ring that the pressure is exerted away from the apex.

After disposing of the cord the reconstruction of the abdominal wall is begun. The first suture brings the conjoined tendon down to the shelving portion of Poupart's ligament, and the succeeding ones bring the internal oblique into contact with this same tissue. The cremaster is included in this layer of sutures. Next the external oblique is closed with overlapping by an imbricated suture. The skin is approximated by any desired method.

When the external ring is very large, when the conjoined tendon is thin, and especially in direct hernia, the rectus sheath and rectus muscle transplantation operation devised by Dr. Halsted and Dr. Bloodgood becomes necessary.

We have made it a rule to take out the appendix when doing right-sided hernias, whenever there is no direct contraindication.

It is not uncommon after operation for cure of a unilateral hernia to have the patient return with a hernia on the other side. Therefore, with young people having a unilateral hernia we do a hernial suture of the canal on the other side, if the condition justifies this additional operation.

The patients are kept in bed about 10 days. We give morphia during the first 24 hours after operation if there is restlessness. Continuous salt solution per rectum for six or eight hours and then 500 cc. three times a day aids in the elimination of the anesthetic and adds to the patient's comfort.

Patients who are suffering from some complicating disability are given appropriate treatment. The more important groups have been discussed in connection with preliminary treatment. We find spartein sulphate in quarter and half grain doses valuable as a stimulant to deficient kidney function. Eserin, one-sixty-fourth grain, is useful in treating post-operative distension of the bowels. The drug is given hypodermically, and its administration should be followed by the insertion of the rectal tube 20 minutes later. The pain that accompanies the muscular contractions necessary to overcome the action of the sphincter is enough to prevent this activity, and the tube avoids the dilemma.

The use of the catheter is often required, but in proportion to the amount of preliminary training patients are given in the recumbent use of the urinal and bed pan they will need less and less catheterization.

These patients get up from the 10th to the 14th day, and most of them go home on the 18th. All dressings are removed before this time, and after a bath a muslin spica is put on in the erect posture. This is changed daily and is worn for about two weeks. After this time no apparatus of any kind is worn, and the patient goes about sound and secure.

THE CARE OF THE EPILEPTIC IN SEPARATE INSTITUTIONS.*

By Wm. T. Shanahan, M.D.,

Superintendent Craig Colony for Epileptics, Sonyea, N. Y.

THE symptom complex known as epilepsy is so protean in its manifestations that many of its symptoms remain unrecognized by the majority of people.

The condition has been described for thousands of years, but the care of these unfortunates in communities by themselves is of quite recent date.

The history of special institutional care, particularly in colonies, has been so frequently reviewed in detail during the past two decades that I will not refer to it at any length at this time.

Some of these special institutions for epilepsy have been but component parts of hospitals established primarily for other types of dependents and defectives, e. g., the insane or feeble-minded. Some have been established to provide accommodation for epileptics, exclusive of those who are insane. Others exclude idiotic epileptics; still others do not admit epileptics under a certain age.

Somewhat similar laws were formerly applied to many of our hospitals for the insane in this country, e. g., by dividing them into institutions for acute insane, chronic or incurable insane. Experience proved, however, that means should be provided in each State hospital for all forms of insanity, no matter what the type or duration. In my opinion, the conclusions reached regarding institutions for the insane should be applied to institutions for epileptics.

Pertaining to the size of the institution, one should estimate that at least one person in 500 of the general population is an epileptic. Of this number about 25 per cent. should at first be provided for to be cared for at one time by the State in the colony. Maryland, on this basis, should have a colony to accommodate at least 600 patients.

Of the epileptics ordinarily seen in our institutions, the majority show some mental abnormality. Of the 2700 in New York State institutions, 50 per cent. are classed as insane, and of the other 50 per cent., with few exceptions, one can but state that a normal mentality is the exception that proves the rule.

Some epileptics during the interparoxysmal period show practically no evidence of their affliction. Memory defects, undue irritability, egotism, etc., are symptoms common to the best. In other words, the epileptic is abnormal in every sense of the term. The degree of this abnormality varies in different epileptics, and also in the individual epileptic, from time to time.

Many epileptics have recurring disturbances of their psychic sphere. Some of these phases of their disease last in some patients

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for hours; in others for days or weeks, after which they clear up. As a rule, though, a progressive mental deterioration goes hand in hand with such recurring periods. Epilepsy and feeble-mindedness are often concomitant signs of a defective individual.

Because of these various forms of disturbance or impairment of the mental processes and the associated convulsions ordinarily present, I am of the opinion that an institution to care for epileptics should, when possible, be so planned that proper provision can be made for all classes of patients of this kind, irrespective of their mental condition. Where sufficient land is available, at least one acre per patient, there should be no difficulty in so grouping the buildings as to provide sufficient separation of the different mental grades.

Because of the recurrent convulsions, the variability of the mind, especially as manifested by irritability and pugnaciousness, it would seem desirable to place all epileptics in an institution by themselves. I must confess that in my experience serious assaults by epileptics on one another have not been as frequent as many writers tell us is the case. At the Craig Colony about 1000 of our patients have entire liberty about the premises. Serious quarrels among them are not much more frequent than in an ordinary village of the same population.

The plea is made that the presence of the insane and the lower grade epileptics has a depressing effect on the other patients, and deters many from entering the special institution. This may be true to some extent, but who is not affected to some degree by the sight of illness and suffering? If the cottages for the more deficient are placed at some distance from those for the brighter class, I can see no objection to having all types in one institution.

The characteristic symptom of the epileptic seizure, if such there be, is the impairment or loss of consciousness. This in itself may be but momentary, but, on the other hand, may pass into or be but the forerunner of an extended period of mental confusion and consequent irresponsibility. With such possibilities always hanging over the epileptic, we can readily understand why he should be placed in a special community, so as to avoid complications arising as a result of these changes in the mental equilibrium.

The epileptic, being subject in most instances to a mental or physical incapacity which may be either partial or complete, is, in consequence, sooner or later barred from remunerative employment in the outside world, thus becoming a dependent on his family or the community. In the home he is a constant source of sorrow and anxiety, and in institutions planned to care for other types of defectives he is a disturbing element, because of his recurring seizures and his irritability.

In the colony or separate institution he becomes a member of a community specially arranged for those of his kind. If his physical

and mental status permit, he is placed at some occupation which tends to make him more contented, improve his general health and, to a certain extent, reimburse the commonwealth for its expenditure toward his support.

At this point I wish to state that the earning capacity of the epileptic, as well as other defectives, as a class, has been overestimated by many of the general public, and even by some more familiar with the special care of such unfortunates. You cannot expect a community of defectives to be self-supporting. The very word defective should imply that such is not to be looked for.

Of the total number of epileptics as seen in our institutions, 50 per cent. are capable of doing labor of some kind, and from 10 per cent. to 15 per cent. can perform considerable work when not incapacitated in consequence of seizures. The regulated occupation of those able to work is of the utmost value in carrying out the treatment of epilepsy, thus forcing us to consider occupation, primarily for its medical value, and secondarily, for its monetary return to the State.

The systematized occupation, the regular hours, the selected diet and the carrying out of a careful hygienic life are of prime importance in the treatment of this condition. They can be best carried out in the properly designed and arranged special colony, where every action, if need be, can be regulated to meet the indications of the individual case. Habits of personal discipline and self-control are inculcated so that the patient of average mentality is enabled to better co-operate in the plan outlined for his treatment.

The type of building for a colony for epileptics should be that of the one or two-story cottage, accommodating of the brighter patients not more than from 15 to 35. The cottages for the lower grade, idle epileptics, can be somewhat larger, but under no circumstances should a single structure be erected to accommodate great numbers of this class. One-story pavilions to accommodate 50 or 75 of this class would, to my mind, give most satisfaction and insure the best possible care. The fewer the stairways, the smaller number of injuries and the advantage of its being easier to get the patients out of doors. I can see no objection to having some of the cottages, at least those for the better mental grade, of frame or concrete, instead of brick construction, thus adding a little variety to the structural plan of the community. None of the cottages should be elaborate and of exceedingly costly construction, nor, on the other hand, should they be so cheaply built that constant repairs are required to keep the cottages in a habitable condition. The cost per capita will vary somewhat with the site of the colony, but in every instance cheap construction is very poor economy.

Separate groups, each with its central kitchen and dining-room, or series of dining-rooms, should be arranged for proper classification, somewhat after the following plan:

Administrative Group	{	(a) Executive Building.
		(b) Hospital for Acute Surgical and Medical Cases.
		(c) Chapels.
		(d) Amusement Hall.
		(e) Schools — Principally for Manual Training.
		(f) Field for Outdoor Sports, etc.

Group of Industrial Buildings, including Laundry, Sewing-room, Tailor Shop, Shoe Shop, etc.

The colony should be divided into two principal parts for the sexes, and then subdivided for :

- (1) Reception Cottage for each sex.
- (2) Group for the better mental grade.
- (3) Group for insane. (Provision being made for both the acute recurring cases and the chronic class.
- (4) Isolation Cottages for those with tuberculosis; and also separate cottages for those having the different contagious diseases.
- (5) Infirmary Group for the low grade, idle patients, with provision for bed-ridden imbeciles, idiots and demented.

For the men :

Groups for the workers on the farm and in the garden.

In the cottages for the acutely ill, which naturally includes those in a disturbed mental state, and in the small cottages for the brightest class, there should be a few single rooms, but, as a rule, small wards are to be preferred to the room for but one patient.

It should always be borne in mind that good nursing is needed in caring for the mentally-upset epileptic, and not isolation in strong rooms. An epileptic at such a time is ill, and should be given the care and attention any sick person requires. Therefore, when planning your single rooms, have them built as such, and not constructed as formerly, when the term "cell" was most applicable in describing them.

Plenty of sitting-room space in all cottages, complete outfits for bathing and hydrotherapy and the smallest possible amount of construction to afford opportunity for injuries to be received during seizures are essentials which must not be overlooked when planning buildings for epileptics.

The number of employees to be placed in the immediate care of the patients depends on the type of patient. A ratio of one attendant to 15 patients is sufficient for the workers. For those

physically or mentally ill, or both, twice the number of nurses and attendants should be provided.

The patients should be divided into the voluntary and the legally or judicially committed. Many of those sent to a colony should be kept there indefinitely, both for their own good and for that of the public. The colony authorities should also have power to secure the commitment of those whose mental condition precludes their being able to properly become residents outside of an institution.

The patients committed should, as a rule, be kept in the colony during the remaining years of their life. This might be at first, perhaps, looked upon as a hardship, but when they learned that the restrictions laid upon them were not unduly severe, they and their relatives would, as a rule, co-operate to the best of their ability.

The epileptic who is congenitally deficient to a marked degree, or the one who is profoundly demented, will not improve as a result of colony treatment. The average epileptic does, however, show some improvement after a residence of several months, and from 3 per cent. to 4 per cent. have a complete cessation of seizures.

We now have at the Craig Colony 16 patients who have been free from seizures for two years or longer, and have, in 14 years, discharged 46 as recovered.

Many with experience will not agree, perhaps, with my deductions, but, for my part, I can see no good reason why, if properly planned, a colony cannot be arranged so as to care for all types and classes of epileptics, thus enabling the other institutions for the abnormal to carry out their work to better advantage.

PRACTICAL SUGGESTIONS IN BORDERLAND SURGERY. For the Use of Students and Practitioners. By Gustavus M. Blech, M.D., Professor of Clinical Surgery, Medical Department Loyola University, Chicago; Director in Chief, Illinois Legion American Red Cross; Surgeon in Chief, Abraham Lincoln Hospital, Chicago, etc., etc. Philadelphia: Professional Publishing Company. Cloth, \$1.50 net. 1910.

The gist of the book is to point out and indicate in obscure cases whether operation should or should not be attempted. The author is of the opinion that too many cases are subjected to the hazards of operation unnecessarily. He is endeavoring somewhat to turn back the tide of operative furor. Far too many invalids are recruited from the surgical wards according to his way of thinking, consequently one should be fully convinced before advising operation that the patient will be benefited. The lesson which the book intends to impart is good, and there are many excellent paragraphs, but, generally speaking, the contents are entirely too sketchy to be of any material service to either student or general practitioner.

ECLAMPSIA.

By A. Samuels, M.D.,
Baltimore.

SINCE the time of Hippocrates the medical world has untiringly endeavored to discover the cause or causes of eclampsia. Theory after theory has been advanced, but none have stood the test of time. The fetal theory which was looked upon for a long time as the cause of eclampsia received its final blow when Hitschmann reported a case of eclampsia in association with vesicular mole. The placental theory advanced a few years ago holds the field today.

The following considerations lend weight to the view that the placenta has a very intimate connection with eclampsia:

(1) Eclampsia has been associated with vesicular mole. When one considers that eclampsia usually occurs in primigravidæ and in young women, and vesicular mole in multiparæ and in older women; further, that eclampsia nearly always occurs in the later months of pregnancy, and vesicular mole in the earliest months, it follows that the number of cases of eclampsia associated with vesicular mole is relatively great.

(2) The placenta has peculiar anatomical relations, for its whole surface is in contact with the maternal blood. Since the villi lie free in the maternal blood spaces, the whole of the trophoblast, representing an enormous surface area, is bathed in maternal blood.

(3) The placenta is known to possess many powerful ferments.

(4) Chemical changes have been found in eclamptic placentas, suggesting increased ferment-activity.

(5) Experimental work, consisting of the injection of various preparations of normal or eclamptic placentas, have produced in animals conditions very similar to eclampsia.

(6) The anatomical changes in the villi of eclamptic placentas, though slight, are noteworthy.

(7) Free placental cells are often found in the maternal circulation; this suggests the possibility of cystolysis.

(8) Certain cases of eclampsia, it has been said, have only ceased post-partum, after the removal of a piece of retained placenta.

Veit, in 1901, suggested that the presence of placental cells in the maternal circulation led to the formation of specific antibodies, which he termed syncytiolysins. Veit and Sholten, in 1902, obtained the following results: Pieces of fresh human placenta deprived as far as possible of all fetal and maternal blood were placed in the peritoneal cavity of rabbits. The urine of these rabbits after 24 hours contained albumin. Their serum was then taken and added to an emulsion of placental cells. Under the microscope the nuclei of these cells were seen to rapidly disappear, which showed that there was present in the serum some substance destructive to placental cells (syncytiolysins). The same serum was not hemolytic to the blood of pregnant or non-pregnant women. Veit concludes that placental cells are toxic and are

destroyed in the maternal circulation by syncytiolysins. If, however, there is a sudden access of syncytium, more than can be dealt with by the syncytiolysins, albuminuria, and in severe cases pregnant kidney and eclampsia results.

In 1902 Ascoli prepared two varieties of sera: (1) a hetero-syncytiolysin, made by treating rabbits with guinea pigs' placenta and iso-syncytiolysin, made by treating rabbits with rabbits' placenta. He found that injecting pregnant guinea pigs intravenously and subcutaneously with heterolytic serum produced no effect beyond a transient albuminuria; pregnancy always continued to term and healthy young were born. On the other hand, injections subdurally of very small doses (0.1 to 0.3 c. cm.) led to rapidly fatal results. The animal immediately passed into a state of deep coma, interrupted by toxic and clonic convulsions. With a very small dose the effect was less and the animal recovered. Control experiments were made with normal sera without effect. Heating the specific serum for an hour at 60° C. diminished its powers. Injections subcutaneously and intravenously with isolytic serum had less effect than the heterolytic serum. Injections of large doses of the isolytic serum subdurally had no effect except in isolated cases. Ascoli asks if autosyncytiolytic sera can be formed in the body, having the same action on the central nervous system as these artificially prepared sera. Although his theory is based on the same general principles as that of Veit, he differs in supposing that syncytiolysins and not placental cells are the cause of eclampsia.

Weichardt accepts the same general principles as those of Veit and Ascoli and agrees that syncytiolysins are formed experimentally and in pregnancy. He differs as to the manner in which the poison is produced. His explanations are rather more complicated, for it introduces another substance, an antitoxin. When an autointoxication occurs it is met by antibodies; if these bodies fail or are feeble, the autointoxication has unlimited action, and it is this principle he considers so important in eclampsia. His theory may be stated thus:

Placental cells plus blood, etc.=syncytiolysin.

Syncytiolysin plus placental cells=syncytiotoxin.

Syncytiotoxin plus sufficient antibody=no result.

Syncytiotoxin plus insufficient antibody=eclampsia.

In 1906 Weichert and Pilz undertook another research on similar lines, and again came to the conclusion that eclampsia was caused by endotoxins liberated by the cystolysis of placental cells in women who have a deficiency of antiendotoxins. They were able to immunize rabbits in the following ways: An emulsion of human placenta was injected into a rabbit; its serum, which possessed syncytiolytic properties, was mixed with a fresh emulsion of placenta; the mixture, which contained syncytial endotoxins, was injected into another rabbit in repeated small doses. The serum of the latter animal was able to protect other rabbits from the injection of comparatively large doses of syncytial endotoxins.

Weichardt thus foresees a serum treatment for eclampsia. These theories may be summarily expressed as:

(1) Veit: due to the presence in the blood of placental elements, too numerous to be dealt with by the syncytiolysins.

(2) Ascoli: due to an excess of syncytiolysins.

(3) Weichardt: due to syncytiotoxins, which have been liberated from placental cells by syncytiolysins and which are too numerous to be dealt with by the antitoxins.

Treatment.—Broadly speaking, eclampsia is a profound toxic disturbance of the whole system, and this toxic change arises from changes produced in the body itself and not as the result of substances introduced from without. The treatment is more or less unsatisfactory, and will remain so until a specific serum is discovered. There seems little chance of our discovering an antidote, as we do not know the nature of the toxin. As we understand the disease at present, the rational method of treatment is to clear the system of these deleterious substances through the usual channels of excretions.

Not every case of eclampsia calls for the same treatment, and not every case calls for the immediate termination of pregnancy. Although there is much divergence of opinion, yet these two principles are most universally approved by the obstetricians of the present day.

The circumstances under which eclampsia comes before the notice of the medical practitioner differ widely, and in many instances the circumstances alter or decide the treatment. For instance, the medical man may discover that the pregnant patient is suffering from albuminuria or from some other of the prodroma of eclampsia; then his duty will be to prevent a recurrence of the convulsion; his treatment will be preventive or prophylactic. Or he may be called to a patient who is having eclamptic seizure in the early hours or days of the puerperium. Then his duty will be to treat the seizures in the best way known to him, and that may be medical, surgical, or both, but obviously it can hardly be obstetric, for the child is born and the uterus is empty. Again, he may be attending a patient in labor, and she may develop eclampsia during the first or second stage; then he will have two alternative plans of treatment before him. He may treat the convulsion without interfering with the progress of labor, or he may treat it by treating the labor and generally in hastening it. His choice will not always be a simple one, for other modifying circumstances may be introduced in these labor cases; he will have to discover and take into account whether the confinement is taking place at full term or before it; and further, he will have to make a distinction between the premature labors in which the child is presumably viable and those in which it is not. Finally, the medical man may be placed in relationship with an eclamptic patient by the fact that she develops convulsions in pregnancy without the supervention of labor pains. Under these circumstances he will be at a loss to define his duty to his patients (mother and unborn

child), but he will undoubtedly be led either to endeavor to restrain the fits without interfering with the pregnancy or to stop the fits by bringing on labor and evacuating the uterus, or to try first the former and then, finding it fails, the latter. To summarize the circumstances under which eclampsia is met with in practice, we may have to do with (1) albuminuria or other prodroma in pregnancy, when the treatment ought to be preventive, and will in many cases be quite successful; (2) eclampsia in the puerperium, when the treatment cannot be obstetric and may be medical or surgical; (3) eclampsia associated with labor, mature or premature, when the management of the case may be obstetric or non-obstetric; and (4) eclampsia in pregnancy not immediately followed by labor pains, when also the treatment may be non-obstetric, obstetric, or non-obstetric followed by obstetric.

Eclampsia may threaten or may occur at various times in pregnancy, and the control may not be associated with the supervention of labor. Under these circumstances preventive or pre-maternity treatment is often of the greatest value, and even after the convulsions have started, non-obstetric treatment will frequently give good results. In the cases of threatened eclampsia the patient may at the time of the commencement of her gestation be in an advanced stage of renal disease. She will then show the prodroma of true uremia and perish in the early months. Dyspnea is often a prominent symptom in such cases, and death may occur without the supervention of convulsions. The only treatment which will prolong the mother's life will be the induction of abortion or premature labor. These cases should be properly classed as uremia or uremic eclampsia, rather than true eclampsia, which threatens to come on in pregnancy. There are certain signs and symptoms which may be regarded as the prodroma of eclampsia; these are chiefly to be found in the urine, and part of the preventive or pre-maternity treatment of this disease consists in regular urine analysis. The symptoms are a persistent decrease in the amount of urine containing albumin, and especially if the albumin be associated with albuminoses, with peptones. The diminution in the percentage of chlorides by some is considered highly significant as a symptom or sign of eclampsia. Associated with these urinary signs there may be edema of the face, slight jaundice, high arterial tension, disturbances of vision, severe headache, epigastric pain and sudden paralysis of groups of muscles. When such signs and symptoms are detected in pregnancy, especially in a first gestation and more particularly in one not associated with pre-existent nephritis, the diagnosis of impending eclampsia may safely be made and the medical treatment should be commenced at once.

In many cases the occurrence of eclampsia may be successfully prevented, but the pregnancy may not go on to full term or a living child obtained. The treatment that has given universally good results in the treatment of these symptoms may be outlined as follows: Rest in bed is absolutely essential, the bowels are to be

cleared out by means of enema and kept acting freely with sulphate of magnesia. A diuretic mixture containing acetate of potash is advisable. The diet is very important, and the very best diet that can be given is milk exclusively. In some patients where milk causes digestive disturbance, a fermented milk may be substituted instead. Usually under this treatment an increased amount of urine is secreted. The edema begins to subside and in many instances the headache is markedly relieved. If the blood pressure remains high and other premonitory symptoms persist, it may be well to place the patient in hot packs. If the symptoms still persist, labor must be induced.

It may be worth mentioning that when the thyroid gland is inadequate, and this be regarded as the cause of the prodroma, thyroid gland extract given in small doses may be helpful.

When eclampsia itself appears in pregnancy without leading to the spontaneous occurrence of labor, prevention here is no longer possible. This does not necessarily mean that pregnancy should come to an end or be brought to an end. The ideal result to be aimed at is stoppage of convulsions with continuance of gestation.

A great many drugs have been recommended in the medical treatment of these prematernity cases, but they all have failed to control the convulsions for any length of time. However, one drug may be relied upon, not only to stop the convulsion, but also to be an indicator for operative or obstetric work. The drug is *veratrum viride*. It is administered hypodermatically in from five to fifteen drops of the tincture. From five to fifteen drops of the tincture should be given hypodermatically every hour or two hours until the pulse rate reaches, say 50, then the pulse should be kept between 50 and 60 by smaller doses of five to ten drops of the tincture until the convulsions have ceased and have not reoccurred in 24 hours. The tincture may then be discontinued. If the convulsions again come on, the same treatment should be administered. In addition to the subcutaneous administration of *veratrum viride* the patient should be placed in hot packs and the bowels flushed with salines. The diet should consist solely of milk, and the patient should be kept in bed in a semi-upright position. The kidneys should be stimulated with normal saline infusion, giving from 250 to 500 cc. If this treatment is successful in controlling convulsions, the patient may go to term and a live baby may be born.

Treatment After the Convulsions Have Been Controlled.—The patient should be watched carefully, the diet should consist solely of milk, and the patient should remain in bed the greater portion of the time. If the *veratrum* fails to control the convulsions, there is but one thing left for the physician to do, and that is to induce labor whether the uterus contains a living or a dead child. If the child be living, it is not a contraindication to the induction of labor, as no one can foretell whether or not the child will survive with the mother in such a poisoned condition.

Eclampsia may occur in the puerperium, and is often immediately

fatal. Mild manifestations of eclampsia in the puerperium should not lead one to give a favorable prognosis. In one instance, about two years ago, I saw a patient who, after having a comparatively easy labor, died two hours afterward, having had but one convulsion, with only slight symptoms preceding the convulsion. Unfortunately, medical and surgical treatment of eclampsia in the puerperium are not always successful. The prodroma of eclampsia will call for the same management now as in pregnancy—a constant milk diet, evacuation of the bowel, hot packs and veratrum viride. If these fail, the practitioner has little or nothing at his command to help matters. Venesection may be tried; spinal tapping and renal decapsulation may temporarily check the convulsions, but it is doubtful if they are of any real value. The association of eclampsia and labor brings with it the necessity of both obstetric and non-obstetric treatment. It is sometimes difficult to ascertain whether labor pains or the convulsions first appeared, for by the time the obstetrician is in attendance both are present. The treatment in these cases should not be routine, but the circumstances should dictate which treatment is to be followed. It is not uncommon to find one of the two extremes practiced; either trusting to medical measures alone in all cases or having recourse to obstetric interference always; some try the former plan first, and when it does not succeed fly to the latter. While we cannot lay down hard and fast rules in the treatment of intrapartum eclampsia, some suggestions may, however, be made. In the first place, from the fact that the patient is already in labor when eclampsia supervenes, we should not put aside non-obstetric treatment. Even if the patient be in the second stage of her confinement, it may be well to transfuse, to wash out the stomach, to give an enema, to put her in hot packs and administer veratrum viride. The child may be born before these measures can be carried out, but then, if that be so, the medical treatment begun can do nothing but good as regards the future progress of the case. Again, all the circumstances of the case should be taken into consideration. Grave conditions are primiparity, a large amount of albumin with blood and tube casts along with marked decrease in the total amount secreted; numerous seizures, localized edema, rather than general anasarca and unconsciousness between the convulsive attacks. In the presence of these formidable indications of danger, medical measures will still be of importance, but preparations should be made to pursue an obstetric plan in the event of immediate improvement not taking place. Forcible stretching of the cervix, with dilators, may be done, but it is not free from considerable risk. Vaginal Cæsarean section is a preferable method of emptying the uterus for these grave cases of intrapartum eclampsia. The milder cases will, of course, demand less heroic means.

ADDRESS BY DR. BRAYSHAW.

ON June 18, 1910, Dr. Thomas H. Brayshaw, president of the Anne Arundel Medical Society, at his home, "Bachelors' Joy," Glen Burnie, entertained at luncheon a numerous company of medical men. The program embraced several addresses. Dr. Brayshaw's welcome to his guests was as follows:

I perceive that I'm booked to address you,
And I will claim a minute to say—
Just a minute, I say—to impress you, my friends,
That you're welcome as flowers in May.
And not only in May, with its floral array,
But any month of the year.
Chill winter, glad springtime,
Lush summer, gay fall;
Whatever the season,
I'd deem it high treason,
Had I not a welcome for all.
State-wide is my welcome
As my friendship's its girth.
What said I? The State?
Sure 'twill girdle old earth;
Like Love's mystic symbol of union the ring,
Welcome to me is a limitless thing.

Your faces around me, seen at close range again,
Nests my heart with both pleasure and pain.
So supreme the strain and so vast,
'Twere God-like to endure long contrast.
'Tis sped with the fleetness of meteor flight,
Athwart the gemmed canvas of Night—
Mem'ry's brush paints and unpaints the Past;
This, too, the Gilgau, the saintly and true, o'er and o'er
Assured us once lived, could return nevermore!
Naught knew he, the seer, of the loved land o' dreams
Where we linger content by Elysian streams,
Where after a day wrought with tempestous fears
We renew in a heart throb the bliss of long years.
Thus doth Dreamland enrich us, and the Present we own,
A chance given to many their past to atone.
Let us live it so well there will be naught to deplore.
Help to retrieve lost ideals, and our *Esprit de Corps*.

"Here's Appetite and Digestion,
With Health on both to wait.
The table? a welcome suggestion—
Should prelude a welcome State.

Book Reviews.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and especially-prepared Original Articles. Volume II, twentieth series. Philadelphia: J. B. Lippincott Company. 1910.

There is nothing especially new or striking in the subject-matter of this volume. Many pages are devoted to the lectures and clinics of the Homecoming Week at the University of Pennsylvania, which are chiefly important as suggesting a like celebration to other medical schools of America. The interesting paper on Book Plates of Physicians is rather out of place in this quarterly. The fact that one-half of the authors contributing hail from Philadelphia detracts considerably from the "international" claims of the volume. The articles on "The Progress of Therapeutics," by Benedict of Buffalo; on "The Diagnosis of Chronic Pancreatitis," by Cumston of Boston, and on "The Spontaneous Cure of Cancer," by McConnell of St. Louis, are perhaps the best. Illustrations and descriptions are given of two interesting devices—de Schweinitz's *tonometer*, for measuring the intraocular pressure, and Hertel's *exophthalmometer*, for measuring eye protrusion.

THE PATHOLOGY OF THE LIVING, AND OTHER ESSAYS. By B. G. A. Moynihan, M.S. (London), F.R.C.S.; Honorary Surgeon to Leeds General Infirmary; Professor of Clinical Surgery at the University of Leeds, England. 12mo. of 260 pages. Philadelphia and London: W. B. Saunders Company. Baltimore: The Medical Standard Book Co. Cloth, \$2 net. 1910.

Though small in size, "The Pathology of the Living" is a mint from which much knowledge concerning the symptoms, etiology and treatment of abdominal affections can be withdrawn. Written by a master in surgery of the upper abdominal tract, the conclusions have some weight. The volume contains a number of essays by Moynihan which have appeared in various medical journals during the past few years, which have now, for the first time, been brought into such a form as to be accessible to those who were unable to see them before. One of the principal lessons which he wishes to impart is that the value of evidence obtained from the living far outweighs that obtained by the pathologists. He also states that the literature of medicine has been too much concerned with terminal events, which, in his mind, is the wrong view to take; rather had we better be engaged in the closest inquiry about the very earliest disturbances of health, so that medical treatment of a condition whose authentic nature is known may be more purposeful, and surgical treatment, when necessary, may be instituted at an earlier and in a safer stage.

The most precious goods come in small packages. This statement applies appropriately to this small volume. It contains succinct accounts of the early diagnosis and treatment of cancer of the stomach, remarks upon the surgery of the common bile-duct, the operative treatment of obstructive jaundice and the proper selection of cases, the violation of Courvoisier's law, the mimicry of malignant disease in the large intestine, the surgical treatment of cancer of the sigmoid flexure and rectum, with especial reference to the principles to be observed, etc. The volume is well worth a careful perusal by not only all surgeons, but also every internist, for a better understanding of the early symptoms of certain abdominal affections means the institution of the proper remedial procedures earlier, with better chances of restoring health to suffering humanity.

PULMONARY TUBERCULOSIS AND ITS COMPLICATIONS. WITH SPECIAL REFERENCE TO DIAGNOSIS AND TREATMENT FOR GENERAL PRACTITIONERS AND STUDENTS. By Sherman G. Bonney, A.M., M.D., Professor of Medicine, Denver and Gross College of Medicine, Medical Department of the University of Denver; Visiting Physician to St. Luke's Hospital; Consultant to the Denver County Hospital; Director of the National Association for the Study and Prevention of Tuberculosis; Member of the American Climatological Association; ex-President of the Denver Clinical and Pathological Society, etc. Second edition. Thoroughly revised. Octavo of 955 pages, with 243 original illustrations, including 31 in colors and 73 X-ray photographs. Philadelphia and London: W. B. Saunders Company; Baltimore: Medical Standard Book Co. 1910. Cloth, \$7 net. Half morocco, \$8.50 net.

This work is devoted practically to the clinical aspects of tuberculosis, subjects of a bacteriologic nature being merely touched. The author introduces his subject with a short historic sketch, giving the essential development in our knowledge of the disease from antiquity to the discovery of the tubercle bacillus by Koch in tuberculous tissues in 1882. Especially interesting is the chapter on organisms closely resembling the tubercle bacillus. After a lengthy discussion as to whether human and bovine bacilli are identical, and whether they can be transmitted from the human to the cow, or vice versa, in which is cited the opinions of numerous investigators both for and against the identity and transmissibility, the author draws the following conclusions:

1. That recognizable differences do exist in their morphologic and cultural attributes, but that these are not of such a nature as to establish a fundamental divergence in the character of the two micro-organisms.
2. That the lack of perfect identity in these separate varieties

of the same bacterial organism is occasioned by essential modifications of the host.

3. That the pathogenic virulence of the bovine form is much greater among animals than is the human bacillus.

4. That a corresponding increased activity and pathogenic power of the bovine bacillus in comparison with the human thus far has not been demonstrated to obtain in human beings.

5. That, on the contrary, among individuals a somewhat greater virulence perhaps attaches to the bacillus of human origin than to the bovine.

6. That the practical dangers of infection from the bacillus of cattle are sufficiently real to justify no abatement of legislative, municipal and individual measures to suppress the disease among domestic animals and afford protection to the human race.

The whole discussion simmers down to the fact that bacteriologists do not definitely know whether the two are of the same strain or not, and that they have no method at present which can accurately determine whether the two are identical. Still the chapter is very illuminating, and gives a fair exposition of the facts as they are known to the scientific world today.

He justly states that the avenue of entrance into the body is now a mooted question, with the old subscribed and universally accepted inhalation theory rudely disturbed by the results of recent clinical, pathologic and experimental investigation. The criticisms of the prevalence of tuberculosis, the influence of race, conditions influencing infection after exposure, histology, gross appearances, method of onset, pain, hoarseness and dyspnea correspond with modern opinion. Complications, mixed infections, diet and prophylaxis are given due attention.

The book has a modern ring, the diction is so easy and the arrangement of the chapters so natural that one could easily delude himself with the idea that he was reading a novel instead of a scientific medical book. The cuts, both tinted and untinted, are exceptionally clear, and the presswork executed in a bold type.

DISEASES OF THE HEART AND AORTA. By Arthur Douglas Hirschfelder, M.D. (Associate in Medicine, Johns Hopkins University). With an Introductory Note by Lewellys F. Barker, M.D., LL.D., Professor of Medicine, Johns Hopkins University. 329 Illustrations by the Author. Philadelphia and London: J. B. Lippincott Co. Cloth, \$6.00 net. 1910.

A thoroughly scientific work on this subject is indeed timely. The cry of the times is the prevention of the communicable diseases, but some of the clamor should be directed to the correction and prevention of diseases of the heart and the blood vessels which carry off as many victims as cancer, tuberculosis, etc. Hard

arteries and an enlarged or diseased heart are looked upon by many as a necessary evil and associate of old age. This is an erroneous view to take, for much can be done to prevent the heart and aorta from becoming diseased, and when affected to prevent further inroads.

The work is a monumental contribution to the modern literature on the heart and aorta. The illustrations are numerous and timely. Some are colored. The bibliography after each chapter is full and adds materially to the value of the book.

In this work the author has admirably presented both the laboratory and clinical phenomena, side by side, and shown what value may be attached to each. The modern refinements of diagnosis have been thoroughly weighed and their value, limitations and applicability thoroughly discussed. Considerable attention is paid to functional disturbances. The Stokes-Adams syndrome is looked on as an organic lesion, due to lesions of the auriculoventricular muscles bundles; the congenital heart lesions are viewed as disturbances in embryonic development.

DUODENAL ULCER. By B. G. A. Moynihan, M.S. (London), F.R.C.S., Leeds. Philadelphia and London: W. B. Saunders Company. 1910.

The series of valuable communications on "The Surgery of Digestive Organs," published by Mr. Moynihan, is a record of far greater value, through his investigation of pathological processes in the living by surgical operation, than the study of lesions at post-mortem examinations.

The volume noted above is an extremely complete study of duodenal ulcer. Historical data, as well as the rarer forms of the lesion, are given. The greatest space, and very properly, is given to the consideration of the all-important chronic duodenal ulcer and its complications.

The conclusions and advice given are sound and trustworthy. We believe that in certain minor differences we handle our patients a little better than Moynihan advises in after-treatment. The danger of acute dilatation of the stomach seems to us a good reason for limiting the amount of water taken in the first few hours. Then we feel that milk is not good food in the liquid nourishment given the first few days after operation. The post-operative dose of morphine is larger than we find necessary.

If the preliminary morphine and scopolamine, etc., with post-operative salt solution by rectum, are of value in the desperate cases of perforation, why not give them in the elective cases? We have found these aids very valuable in adding to the comfort of patients in all sorts of operations.

The book concludes with an 111-page appendix by Harold Collinson, containing a detailed statement of all cases operated upon to the end of 1908, with an analysis and summary.

MARYLAND MEDICAL JOURNAL

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BALTIMORE, AUGUST, 1910

DOCTOR MIHRAN K. KASSABIAN, A MARTYR TO SCIENCE.

MEDICAL research has claimed another victim, and the medical profession has lost a most promising member. It is discouraging that our brightest lights are called to their reward before their work is accomplished, but thus is life. By the death of Doctor Kassabian during the early part of the month of July, another name has been added to the honor roll of medical heroes who have sacrificed their lives on the altar of science. Though he full well knew the dangerous character of the agent with which he was working, he never for one second turned aside from his chosen specialty. Courage of this kind marks a man. His courage should be extolled to the world, for deeds like his signify heroism more than any bravery shown on the battle field. He was fully aware that his reward would be death sooner or later. Still he hesitated not a moment in his work.

Doctor Kassabian died in the Jefferson Hospital, Philadelphia, of cancer contracted from constant exposure to the influence of the X-ray. A pioneer in the field of Roentgenology, he has labored indefatigably for its advancement, as a result of which, in 1902, he perceived for the first time the ill effects of the use of this mysterious agent when he noticed X-ray burns on his hands.

Two years ago his hands became so badly affected that it became necessary to amputate two fingers. The operation, however, did not check the progress of the disease, which a year ago was found to have invaded the left axillary glands. These were removed, but to no avail, eradication having been shown to be incomplete by the prompt recurrence of the malady. Several more operations were performed with the hope of checking the growth, but the result was ever the same. Doctor Kassabian, a native Armenian, was born in Cæsarea, Asia Minor, 42 years ago. He came to the United States in 1894. In 1898 he determined to

enter on the study of medicine and matriculated at the Medico-Chirurgical College, Philadelphia, from which institution, in due course, he received his medical degree. During the Spanish-American War he served in the Hospital Corps of the United States Army. After graduation he became instructor in electrotherapeutics and Roentgenology in the Medico-Chirurgical College. In 1902 he resigned this position to assume the directorship of the Roentgen ray department in the Philadelphia General Hospital, which position he held at the time of his death. Not once during his long illness did Doctor Kassabian lose interest in his work, although for the last eight months, in order to avoid any further damage, he superintended, rather than actively engaged, in the practice of his specialty.

In doing honor to the memory of the late Doctor Kassabian, it is also well to point out that the dangers of the X-ray have at the present day been greatly diminished. The early operators, of whom Doctor Kassabian was one, were unaware of the hidden dangers attached to exposure to the influence of the X-ray. They took no precautions to protect themselves, and, indeed, invited injury by frequently fluroscoping their hands to see whether the light was or was not of the proper intensity. Today, the evil results of the constant application of the ray being thoroughly understood, operators take every precaution to prevent injury either to themselves or their patient. This is done, on the one hand, by the operator getting behind lead screens, or in some instances in rooms whose walls are lined with lead sufficiently thick to prevent the passage of the ray, the machine being operated entirely by switches; the patient is protected by covering the parts, other than that to be examined, with sheet lead, and making the exposures in seconds, where formerly a much longer time was employed.

Doctor Kassabian was an acknowledged authority on the subject of the X-ray, and as such was chosen to represent the United States at conventions of X-ray experts that were held several years ago in London and in Paris. He was a prolific writer on his specialty. The most important of his publications is "Electro-Therapeutics and the Roentgen Rays," which is used as a text-book in many of the leading colleges of the United States.

About 18 months ago he went to Constantinople to wed Miss Virginia Giragosian of that city, by whom he is survived.

Medical Items.

DR. A. SAMUELS will sail for Europe July 26 to attend the gynecological clinics, and will return to Baltimore about September 16.

AMONG the many Baltimore physicians who, with their families, are spending the summer out of town are Dr. Thomas R. Brown, who is touring Europe; Drs. Christopher Johnson and Mactier Warfield, who are spending the season in Roland Park; Dr. John Turner, who is visiting Mediterranean points; Dr. Charles W. Mitchell, who is spending the summer abroad; Dr. George Reuling, at Narragansett Pier; Dr. Charles O'Donovan, at Phoenix, Md.; Dr. Jas. K. Cullen, at Waynesboro, Va.; Drs. J. M. T. Finney and Thomas R. Buckler, who are abroad; Dr. Jesse C. Coggins, on the Pacific coast; Dr. Hiram Woods, at Blue Ridge Summit; Dr. J. M. Lynch, at Fairview, N. C., and Dr. Leonard K. Hirshberg, in Canada.

THE engagement is announced of Miss Bettie Grace Duncan to Dr. William Burgess Cornell. Dr. Cornell has been one of the resident physicians at the Shepherd and Enoch Pratt Hospital for six years, but resigned on July 15 to accept a position in the Massachusetts State Hospital for the Insane.

A REPORT from Boston says that Dr. Harvey Cushing has accepted the position of surgeon at the Brigham Hospital, now being erected in connection with the Harvard Medical School, and will leave Baltimore in two years' time to go there.

DR. JOHN E. SANDBURY of Forestville, Md., has been re-elected as county health officer of Prince George's county for a term of two years.

MUCH protest has been born of the Carnegie Foundation report on the medical schools of Maryland, and the deans and professors of the various schools have issued strong denials of many statements in the report.

DR. JOHN S. FULTON has prepared an outline for the work of the Municipal Tuberculosis Commission, of which he is chairman.

DR. ALEXIUS M. FORSTER, formerly superintendent of the Eudowood Sanitarium, has purchased a sanitarium at Colorado Springs, Col.

DR. HOWARD A. KELLY has been chosen as one of the delegates to attend the International Congress of Physicians and Surgeons, which meets in St. Petersburg September 22 to 28.

DR. AND MRS. HENRY CHANDLEE are camping in Canada, and will return to Baltimore in September.

MARRIAGES.

JAMES HERBERT BATES, M.D., University of Maryland, '07, of Forest Park, Md., to Miss Nan Steele Sterne of Greensboro, N. C., June 22, 1910, at Greensboro, N. C.

JOSEPH ISAAC KEMLER, M.D., University of Maryland, '07, of Hartford, Conn., to Miss Rebecca Macht of Baltimore, June 29, 1910, at Baltimore, Md.

ALEXIUS MCGLANNAN, M.D., C. of P. and S., '95, of Baltimore, Md., to Miss Sally Porter Law of Hartford, Conn., July 2, 1910, at Philadelphia, Pa.

J. PAGE STRONG, M.D., to Miss Camilla Lucille Gordon, both of Baltimore, June 29, 1910, at Baltimore, Md.

LESLIE GEORGE TAYLOR, M.D., Baltimore Medical College, '94, of Perryville, Md., to Miss Jessie Rebecca Arthur of Baltimore, July 20, 1910, at Baltimore, Md.

DEATHS.

CLAUDE VAN BIBBER, M.D., University of Maryland, '77, at St. Joseph's Hospital, Baltimore, July 11, of nervous trouble, aged 57 years.

JESSE WRIGHT DOWNEY, M.D., University of Maryland, '69, at his home in New Market, Md., of cerebral hemorrhage, June 25, aged 62 years.

NATHANIEL R. GERRY, M.D., University of Maryland, '64, at St. Agnes' Hospital, Baltimore, Md., July 2, aged 78 years.

JOHN WILLIAM PLUMMER BATES, M.D., Jefferson Medical College, Philadelphia, '62, at his home in Baltimore, July 8, 1910, of Bright's disease.

WILLIAM C. COMSTOCK, Hahnemann Medical College, Philadelphia, '96, at his home in Baltimore, June 5, 1910.

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Editorial Comment.

RESPONSIBILITY OF ARMY MEDICAL OFFICERS FOR THE SANITATION AND HEALTH OF TROOPS.

Medical Record.

MAJOR EDWARD L. MUNSON of the United States Army Medical Corps has dealt with the above question in the Seaman Prize Essay for 1909. The points discussed in the essay are as to whether army medical officers should be held directly responsible, and the limits of such responsibility. Responsibility is defined by the writer as absolute responsibility.

In the first instance Munson points out that the duties of a civil medical officer and those of an army medical officer differ somewhat widely. The civil medical officer is entrusted, to the best of his ability, with the safeguarding of the health of a community. His is no divided duty. On the other hand, the duty of an army medical officer is divided. In time of peace his services approach somewhat closely to those of his brother in civil life, except that he is always subject to the commands of his superior officers, and, indeed, his work is ever subordinated to the good of the army. His real object is economic, to maintain military efficiency, and any other consideration is secondary. Of course, in time of war medical officers must acquiesce in the disregard for health laws by a commander if actual military necessity so demands. From a perusal of the army regulations it will be gathered that the activities of medical officers with troops in posts or in the field are in a sanitary way officially limited to the functions of investigation, report and recommendation.

It would seem to be proved with sufficient clearness that a medical officer cannot be held responsible for the health and sanitation of the troops with which he is serving, but that such responsibility is reposed in the commanding officer. This, thinks Munson, is as it should be, and the fault lies not so much in the army sanitary system as in the individual neglect and inefficiency of the officers responsible for its application, and the remedy lies in the creation of a strong central authority keenly alive to the practical military importance of sanitary results—an authority which would at least as quickly cause the court-martial of a commanding officer for maladministration of sanitary affairs as for maladministration in respect of property matters or the non-maintenance of discipline.

Although Munson is of the opinion that medical officers should not be held directly responsible for the sanitation and health of troops, he yet believes that they should have a measure of power and responsibility. He holds the view that, first, a class of line officers should be developed and educated fully appreciative of sanitation and its results; second, the medical officer should be endowed not with direct responsibility for sanitary results, but with executive authority within certain limits delegated to him by the commanding officer, for whom he acts as an official but subordinate agent in the management of sanitary affairs. It is pointed out that the importance of good sanitation in an army is freely recognized by officers, and that the type of officer who regards sanitary investigation as meddlesome and sanitary recommendations as more or less insubordinate criticism of his administration is fast dying out. According to Munson, then, what is needed to render the work of the army medical officer more effective, in addition to the suggestions quoted above, is that commanding offi-

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cers should interest themselves personally in matters of sanitary administration equally with other administrative affairs, and that they should consider the surgeon primarily in the light of his military status as a staff officer, whose special technical knowledge, like that of the quartermaster, engineer or commissary, should largely be drawn upon and used from time to time.

Undoubtedly the main *raison d'être* of the army medical officer is not that of a practicing physician or surgeon, but is that of a preventor of disease. By neglect of proper sanitary precautions armies have been decimated by preventable disease. If the Japanese and German army authorities can prevent disease from gaining a foothold among the troops, why cannot the American and British army authorities? The truth is that a more intelligent system is in vogue in the Japanese and German armies, and, what is more to the point, this system is rigidly carried out. Co-operation between the line officers and the medical officers as suggested by Munson would be a long step in the right direction, but unless the necessary sanitary measures are enforced by strict discipline these would be of limited effect.

DR. RICKETTS.

American Medicine.

THE death of Dr. Howard T. Ricketts from typhus fever in the City of Mexico adds another name to the growing list of American physicians who have laid down their lives in the study of disease. In the midst of the common struggle for money, position and power it is good for mankind to know that there are individuals who are exposing themselves daily to the gravest of perils with no other object than the effort to solve the great problems of disease. It is too bad that a life has to be sacrificed to teach the people at large that such true unselfishness actually exists. But it needs a harsh lesson once in a while to make an impression on a people so self-absorbed as we have become, and the tragic side of Dr. Rickett's death will perhaps serve a far-reaching purpose after all. From certain standpoints it may be said that the death of this young and splendidly educated physician represents an abject failure. Not only did he fail to accomplish the object of his undertaking, but he lost his life, and the world is robbed forever of services which, in the light of his previous work, gave unusual promise. He was a hero, but fate made him fail. This is one side.

But there is another, and if there is a man or woman on God's green earth who will not thrill at the picture presented, his or her heart must be of adamant. Modestly and unobtrusively, but with the enthusiasm of the true lover of science, Dr. Ricketts delved into the pathologic secrets of this dread disease, typhus. It calls for no words of ours to tell how loathsome and repulsive were the details he was called upon to investigate. But he never flinched, and with never a fear or thought of self he worked on. Who can say what visions were with him as he toiled and studied—visions of wresting the final pathologic secrets from a few stricken bodies, and with the facts learned to emancipate humanity for all time from one of the remaining scourges? Who can say how close he was to his goal and what exultation he may have felt at the boon he expected to give to his fellow-men? And then the end came. The talons of the monster reached out, and in a few hours it was all over. Almost at his work table, with his eye to his microscope, or while at the bedside of some afflicted patient, the blow fell. And

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he who a few hours before had been an enthusiastic, hopeful, confident seeker of the truth, a possible deliverer of the people from the source of typhus, was now nothing but another victim, defeated and silenced forever.

But in his sublime devotion to scientific investigation, seeking with unlimited zeal that which would not enrich him nor bring him anything but the satisfaction of work well done, Dr. Ricketts has given the world an example of unselfishness that can hardly fail to inspire all mankind.

Call such a life a failure? Rather call it an exemplification of the grandest success a man can achieve, a success that can only be born of a true love of humanity.

"Greater love hath no man than this, than that he shall lay down his life for another."

Excerpts.

DEEP PERINEURAL INJECTIONS FOR THE RELIEF OF TRIFACIAL NEURALGIA (SIXTY CASES) AND SCIATICA (THIRTY-THREE CASES).

THE experiences herein set forth are personal, and relate to the treatment of some forms of neuralgia by deep intraneural or perineural injections after methods already referred to and advocated in earlier papers.*

As concerns their employment in trifacial neuralgia, Schlosser, in 1903, was the first to conceive the idea of the deep alcohol injections for this distressing condition. I have, however, not availed myself of his method, preferring that of Levy and Baudoin, which contemplates the injection by an extrabuccal route of the three large divisions of the fifth nerve at their foraminal exits from the skull. The observance of particular landmarks and the use of an especially designed needle are essentials to the success of these injections.

General anesthesia is neither necessary nor desirable, although two patients insisted upon its administration. The formulas with the alcohol in ascending strength of 70, 80 and 90 per cent. remain unchanged, but a slightly sharper cutting-edge needle is used. Analgesia in the area supplied by the branch injected is the best criterion of having successfully reached the nerve. In two instances, however, analgesia was prompt and marked, and yet the paroxysms of pain continued unabated. Why this should be I am unable to say. In one patient, with hemophilic tendencies, a hematoma of the size of a small apple formed in the cheek. Facial edema is often marked, but should not give rise to anxiety, since its subsidence may be slow. No ocular palsies resulted in my cases, although a few instances are reported in the series of other writers.

My first patient was injected November 20, 1906, and my last to date April 8, 1910. During this interval I have injected in all 60 cases of what I regard as genuine tic douloureux. Eight cases besides this number I have construed as atypical or impure forms of the disease, and as such unsuited for this treatment. In all the cases the chief diagnostic criterion was the existence of short, sharp paroxysms of intense pain, without referable cause, and characteristically refractory to treatment. To reduce error, due regard was

* (a) "The Methods and Technic of the Deep Alcohol injections in the Treatment of Trifacial Neuralgia," *Jour. Am. Med. Assoc.*, November 9, 1907. (b) "The Treatment of Sciatica by Deep Perineal Infiltrating Injections of Salt Solution," *Jour. Am. Med. Assoc.*, February 6, 1909.

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shown for dental abnormalities and diseases of the jaws, mouth, nares, accessory nasal sinuses, any of which sources are frequently responsible for pains which may quite closely simulate those of the disease. It should be added that tumors involving the fifth nerve as well as syphilis and migraine can and do give rise to pains that may readily deceive as trifacial neuralgia. Hysterical pains, either primarily or secondarily superimposed upon those of tic douloureux, need not give rise to confusion, although they must be given due consideration in advising the treatment and thereupon basing the prognosis.

In most of the cases external skiagraphs were taken, and where these were felt to be unsatisfactory or unreliable, *intrabuccal* films were supplemented for the purpose of eliciting better detail, thereby affording a still more accurate means of properly localizing foci of irritation.

To be more specific, I submit that in point of age the incidence in my cases conforms to that noted by others and bears out the contention held for so long that trifacial neuralgia is essentially a degenerative type of disorder, tending to increase in severity and frequency with advancing age.

In point of therapeutic results, 37 cases were distinctly benefited (complete abeyance of pain for a longer or shorter period); 11 were improved (great reduction of pain); 8 were unimproved (pain influenced); 4 were aggravated (pain increased, if anything).

Of the 37 benefited, one patient was entirely free from pain for one year and eight months. The shortest free interval has been two weeks. Among the successful cases recurrences have been recorded; many, however, went without recurrences for about one year. A given number returned for reinjection upon the first re-appearance of pain, some in four months, others in six, and others again in 10 months. This variability in results does not admit of satisfactory explanation, but may in large part be due to the accuracy with which the alcohol was deposited in, at, or near the nerve.

As concerns the solution available for the injection treatment of *sciatica*, it should at the outset be emphatically stated that *alcohol is strictly contraindicated in this affection*, on the ground of its being harmful and even disastrous when injected into a mixed (sensori-motor) nerve.

In most instances the relief after treatment was almost immediate and complete. Only in a few patients were more than three injections at intervals of 48 hours apart indicated. There were neither unpleasant effects nor untoward complications.—*D'Orsay Hecht, M.D., in Medical Record.*

FISTULA IN ANO—EXCISION AND SUTURE.

Medical Record.

It has always seemed rather unnatural to me to watch the long-drawn-out process of healing following the usual method of operation for fistula in ano.

If a fistula has been existant for some time and we split it open, we find that scar tissue has been formed and a well-defined channel has been built up. It appeared to me, therefore, that this tube was simply a means to an end, and not the exciting medium. Results have confirmed this contention. The method is a simple one, and I am convinced that many have utilized it before me, but were too busy to publish it. I may add that we have given E. Beck's bismuth paste a thorough trial, but failed utterly with it.

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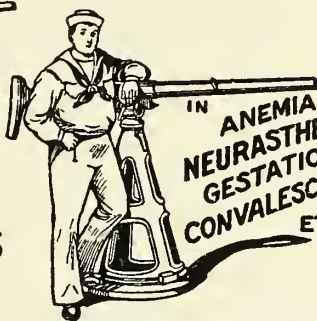
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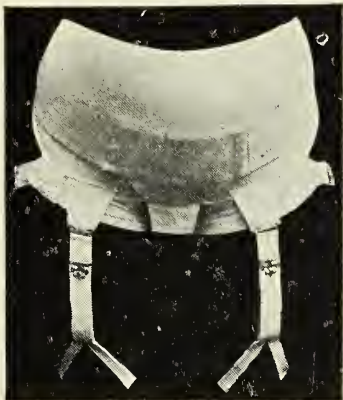


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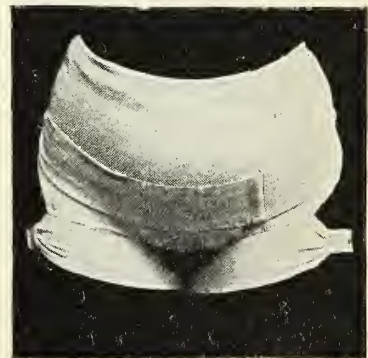
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MAN'S BELT—FRONT VIEW

The patient is admitted to the hospital on the day before operation and is well purged. He is allowed no solid food whatever, and his colon is thoroughly evacuated by enema one hour before operation. Anesthesia is usually by ethyl chloride, as the operation is a short one, and the patient later on is the better for it. A probe is inserted into the canal and pushed through until it can be felt by the finger in the rectum. A grooved director is now slipped in over the probe. I use it because it is a more powerful instrument and will not bend when traction is exerted with it. Running the tip of the scalpel along the groove, the tissues are slit open with one sweep. Be sure to cut through the sphincter at right angles and it will reunite perfectly. Have the wound surfaces spread well apart and carefully remove all scar tissue in view with a sharp, blunt-pointed scissors. If in doubt, rather cut away a little too much than not enough. Pay particular attention to the internal end of the wound. When all the offending tissue has been removed, paint the whole surface over with tincture of iodine. I am firmly convinced that the highly antiseptic properties of the iodine are the dominating factor toward union by first intention. The scanty bleeding can easily be controlled by sponging.

Great care must be exercised in bringing the severed tissues together closely and accurately. For suturing material I use silk-worm gut, and find it excellent for this purpose. The first suture is placed at the inner angle of the wound. The edges of the gut and sphincter are brought together with mouse-toothed forceps and a generous bite taken with the needle. A strong needle is imperative. Be sure you get enough tissue with your suture, as it will form a cushion when you exert pressure and will tend to keep the wound surfaces closely approximated. Sometimes it is necessary to make the suture for the sphincter an extra one, especially in those cases in which the fistula opens fairly high up in the gut. Leave the ends of the suture long, clamp it and let them hang down out of your way. Sew up the rest of the wound in like manner, placing a stitch about every half-inch and burying your needle deeply each time. Leave all the ends long, and when you have finished carry them all to one side and fasten them to the buttock with adhesive plaster. This will prevent irritation of the parts and add to the comfort of the patient. When the operation is completed a T-binder is applied.

The patient is kept on his back and in bed, and his peristalsis held in check for at least four days by the administration of bismuth and opium. Only such nourishment is given as will leave the least amount of residue. When the patient begins to complain of cramps and colic his bowels are evacuated by means of an oil enema. He is usually allowed to go home at the end of the seventh day. At the end of 10 days I remove all sutures excepting the innermost one, which should remain for two weeks to insure a perfect result.

Since the fall of 1908 I have operated upon 17 cases in this manner, and have had only one in which the patient was not discharged as fully cured within two weeks. In that case I employed a curette instead of the scissors for removing the scar tissue, and a stitch abscess formed at the outer angle of the wound.—*By E. C. Beck, M.D., New York, Attending Surgeon to St. Mark's Hospital; Instructor of Surgery at the New York Postgraduate Medical School and Hospital, etc.*

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ON THE PREVENTION OF RACIAL DETERIORATION AND DEGENERACY, ESPECIALLY BY DENYING THE PRIVILEGE OF PARENTHOOD TO THE MANIFESTLY UNFIT.*

By Lezcellys F. Barker, M.D.,

Professor of Medicine, Johns Hopkins University, Baltimore, Md.

It is reported of Dr. Oliver Wendell Holmes, that on being called to see a mentally diseased child, he told the mother that a consultation should have been held some time before. At the mother's protest that this had been done Holmes said, "Ah, the consultation should have been held some fifty years ago!"

At request, I am going to speak tonight of a subject which in many ways is very unpleasant and disagreeable. Anyone who deals with it, no matter how cautiously, may easily be misunderstood; opinions are often attributed to the speaker which he does not hold; prejudiced people are prone deliberately to misinterpret his remarks and hypersensitive people ask us why we should mention matters which are so painful. Even many physicians are disinclined to touch the subject, though medical men are better able to understand the true condition of affairs than are those untrained in medicine. The time has come, however, when the important field of racial deterioration and degeneracy must be carefully studied. It is the duty of preventive medicine to take the lead here. If medical men show moral cowardice in facing the situation, we can scarcely expect the laity to be more brave. I feel assured that in this audience I shall speak only to sympathetic ears when I refer to some of the methods recommended for the prevention of race deterioration and degeneracy. It will be necessary to preface my remarks with a few brief statements regarding the varieties of degeneracy, their prevalence, the cost of the main-

*Read before the Medical and Chirurgical Faculty, April 23, 1910.

tenance of the afflicted and some of the causes of the conditions under consideration.

VARIETIES OF DETERIORANTS AND DEGENERATES.

The class of people to whom I refer includes the insane, the imbecile and feeble-minded, the chronic inebriates, the criminal classes, habitual vagrants, the permanent pauper class, the congenital deaf and dumb, the sexual perverts and the like.

In every State there is a relatively large number of people who come under some one of these various headings. Many of them fortunately are segregated, but many are outside of institutions, and even those who spend some time in institutional life have periods of liberty. A fairly large proportion of them are or have been married. Many of them are the parents of children, and a certain proportion of these innocent and helpless offspring inherit defective nervous systems which result in the swelling of the defective and delinquent classes.

THE PREVALENCE OF DEGENERACY.

We cannot do better, perhaps, in considering the prevalence of degeneracy than squarely to face some figures which I have collected regarding the unfit and undesirable members of society in our immediate neighborhood. I refer to the City of Baltimore and the State of Maryland. Through Dr. A. P. Herring of the State Lunacy Commission I learn that there are no less than 3700 insane persons under care in this State at the present time. I am told by Dr. Keating that there are 305 idiotic, imbecile, feeble-minded and epileptic children in the Maryland Asylum and Training School for the Feeble-Minded at Owings Mills, and that there are 200 on the waiting list for admission. To these, 48 families have contributed from two to four individuals each, and in several of these families there are records of imbeciles in each generation for four or five generations back. Dr. Keating tells me that there are, in his opinion, about 1000 outspoken defective children in the State who are of indigent origin, and it is safe to assume that there are at least 1000 more among the more well-to-do. These numbers do not include so-called backward or exceptional children, of whom there are doubtless even a larger number, though it is practically impossible at present to secure any reliable statistics on the point. Some hint as to the frequency of occurrence of such backward children may be gathered from the fact that the teachers in the public schools of this city have reported some 712 instances among 70,000 children in which there is believed to be defect sufficiently marked to separate these children from their fellows. It is possible that a medical study of these 712 children may show that some slight physical ailment is responsible in a certain number of cases, but in all probability a large proportion of the 712 are actually mentally backward, as the teachers fear. In the ungraded and special classes of the public schools of this city Superintendent Van Sickle tells me there are now some 440 children. Among these 440 are included (1) children who are un-

equal to the ordinary work of the school, and (2) children whose behavior is so bad that they cannot be placed in the regular classes, in addition to (3) the children who are obviously mentally defective.

Turning for a moment to the criminal classes, there are now 1102 persons incarcerated in the Maryland Penitentiary, 570 confined in the House of Correction and 579 in the City Jail. State's Attorney Owens has supplied me with the report of the Board of Police Commissioners, which shows that during 1909 there were 31,806 arrests in this city; 4357 of those arrested stated that they had no occupation, while 551 of them admitted that they were prostitutes. During the year 1909 271 persons were reported to the Grand Jury from the Marshal's Office for keeping bawdy-houses. It is said that on an average there are three inmates to a house. State's Attorney Owens further informs me that 88 cases of suicide were reported by the coroners last year in this city.

A large proportion of the children who are arrested and heard by the magistrates for juvenile cases come from homes in which the parents are abnormal. During 1909 no less than 2562 children under sixteen years of age were so arrested and heard in this city.

I find it very difficult to form any real estimate of the number of chronic inebriates in the city and State. Mr. Grasty of the Board of Charities and Correction tells me that there were 4200 arrests for drunkenness during the year, but many of these arrests were of one and the same person at different times. Inebriates are not permanently detained in this State, and many of them become fathers and mothers of children and pass on a degenerate nervous system.

The large number of paupers in the State also gives some clue as to the prevalence of the inefficient brain and body. Mr. George Schuster of the City Hall Annex tells me that there are on the average between 1300 and 1400 people constantly at Bayview. A portion of these are tuberculous, a portion of them insane, but most of them inefficient, intemperate ne'er-do-wells, who either have no homes or cannot be tolerated by their relatives.

As to the number of habitual vagrants it is again difficult to give accurate figures, as I have found on talking with Mr. Wise, the Superintendent of the Friendly Inn and others, but that the number is large is certain. A great step forward was made when the lodging of vagrants at police stations was discouraged; twelve years ago no less than 27,000 lodgings were granted at the police stations to vagrants in one year; last year less than 1000 applied to the police stations for a night's lodging. The city has paid, however, for 7000 or 8000 lodgings at the Friendly Inn. A conservative estimate places the number of vagrants in Maryland today at 6000.

The total number in the city and State of those deaf and dumb from birth, though not large, proves conclusively that far too many marriages take place among those who bequeath this kind of inheritance to their children.

The figures I have put before you give some idea of the numbers of the manifestly undesirable in the community in which we live, and you will note that I have said nothing of the cases of chronic physical diseases which occur in the various general hospitals. I desire for the present to leave the latter entirely unconsidered and to fix attention upon the more obviously unfit.

A WORD AS TO THE ECONOMIC ASPECTS OF THE PROBLEM.

One has only to consider the expenditures in connection with asylums, hospitals, penitentiaries, jails, reformatories and similar institutions to realize the importance of this matter from the economic standpoint. Take the one item of the insane and the feeble-minded. Dr. C. L. Dana makes the statement that there are now in the United States about 145,000 insane and 120,000 feeble-minded, and this number is increasing annually at the rate of about four per cent. Counting the cost of an adequate plant for caring for the insane and feeble-minded, and calculating the annual interest on this amount, it is found that it comes to some \$60,000,000 per year. Add to this the loss of the work which would be done by the men among this number were they healthy; their earnings would amount to \$28,000,000 per year. Dr. Dana asserts, therefore, that the insane and feeble-minded of this country cost us over \$85,000,000 annually, and that this amount is increasing absolutely at the rate of four per cent. yearly. These figures refer to lunacy and feeble-mindedness alone, and do not include the cost of criminals, paupers and other defectives or delinquents.

CAUSES OF DETERIORATION AND DEGENERACY.

When we look about us to ascertain the origin of this dreadful burden of degeneracy imposed upon the State and the nation we find two main sets of influences at work; first those of the environment; and, secondly, those of heredity. Most attention has been paid, I think, to environmental influences, both by the medical profession and the laity; it has been hoped that by changing the circumstances in which people live we might diminish the number of those who in the struggle of life tend to become insane or criminal or vagrant. It has also been hoped that better methods of treatment of the insane individual, of the imbecile, of the epileptic, of the drunkard, of the prostitute and of the sexual pervert might lead to reclamation and that many of those individuals might be restored as efficient members to society. Now undoubtedly a vast deal has been accomplished by measures tending to improve external conditions and by expert methods of treatment, and there remains still more to be done. The movement against child labor, the improvement of factory and shop conditions, the campaign against the abuse of alcohol, the education of people regarding the dangers of infection, the improvement of the condition of the poor, the instruction in personal and social hygiene, the better treatment of the insane and of the criminal are accomplishing much and will do still more. These methods, however, do not attack the evil at its root. The fact is that the members of the

class to which I am referring are for the most part destined from birth to inefficiency or disease because they are born with nervous systems which are abnormal.

Too little attention is paid to the important matter of parenthood. Most people drift together into marriage without any thought, or at any rate without sufficient thought, of the supreme function of marriage or of their suitability for participation in this function.

Public opinion has not been properly formed as yet in this matter. Society must be brought to the point where it realizes that it is its duty to protect itself against the propagation of a degenerate stock. Only after it has been brought to its senses and shown that the criminal type will often reproduce the criminal and that inebriates, epileptics, the insane and the feeble-minded, when they become parents, are much more likely than are healthy people to have children with insane tendency, with alcoholic tendency, with epileptic tendency or with other degenerate tendency, can much progress be made.

METHODS OF PREVENTING THE PROGRESS OF DEGENERACY.

At a recent meeting of the Maryland Society of Social Hygiene I called attention to the importance of the eugenic movement and to the desirability of considering the coming race by providing for the birth of healthy children and by lessening the number of unhealthy children born of parents mentally and physically unfit. Nothing is more horrible than the thought of unnecessarily permitting the birth of diseased children destined to be feeble-minded or to become insane or criminal.

I recognize fully the fact that we are still only at the beginning of knowledge of the causes at work in the origin of degeneracy; I grant that even if we lived up to the knowledge we possess we could by no means prevent all insanity, all crime or all imbecility. There are factors responsible of which, in many instances, we are as yet utterly ignorant and which are entirely outside our control; on the other hand, I maintain, that we have some certain knowledge of causes which will permit us to act rationally in the prevention of the birth of degenerate human beings. My opinion is that we ought to begin in a very moderate way by correcting the most glaring defects in our present methods, for there is enough to do along lines upon which we may act with certainty without troubling ourselves at present with matters which remain in doubt. It would be a mistake to frighten people of average health and ability on the ground of possible degeneracy. We cannot emphasize too strongly the importance of the birth to healthy parents of as large numbers of healthy children as they can, without too great hardship, rear and educate. What we can and should do at present is to deny the privilege of parenthood to men and women whom everyone would agree in regarding as unfit and undesirable members of society.

In Michigan, Minnesota, Connecticut, Kansas and Ohio I under-

stand that women under forty-five years of age who are imbecile, insane or epileptic are not allowed to marry. Aside from this very little has been done, except by temporary segregation, legally to prevent the propagation of the unfit.

Various remedies have been proposed, among others (1) compulsory abortion in the pregnant degenerate; (2) the obligation to use mechanical checks to impregnation; (3) segregation for life in institutions or colonies; (4) the encouragement of suicide among degenerates; (5) euthanasic execution of degenerates; (6) sterilization by surgical or other means. Of these the only methods likely to receive any large public endorsement in the present state of society are (1) permanent segregation, or (2) some form of sterilization (surgical; or X-ray).

Prohibition of marriage is wholly insufficient for the outspoken degenerate, since it is especially the defective and criminal who are prone to procreate outside of wedlock. In the celebrated Jukes strain many of the children were illegitimate. The young man in New York recently found guilty of enticing a young business woman to his room, of criminally assaulting her, and, while she was still breathing, of forcing her body into a chimney and setting fire to it, was, I am told, himself the illegitimate child of a rapist father. If we are to prevent parenthood in degenerates we must either permanently segregate or in some way make impregnation or conception impossible.

Permanently to segregate all members of the classes we are considering is practically impossible, and if it were possible it would cost an enormous sum to do it. Surgical sterilization in the form of castration or spaying will probably never meet with widespread approval. Whether or not surgical sterilization in the form of Rentoul's operation of vasectomy in the male and fallocotomy in the female will become popular remains to be seen. These operations proposed by Rentoul are very slight procedures which can be done under local anesthetic, in a few minutes, without pain or danger and without any mutilation of the patient.

In vasectomy a portion of the vas deferens isolated from the rest of the spermatic cord is exposed, ligatured in two places, and the intervening part excised. In women each Fallopian tube is operated upon, either per vaginam or by abdominal incision, the uterus and ovaries being left intact. Though the individual operated upon is sterile, there is no impairment otherwise of sexual function. Sexual desire, sexual power and sexual pleasure are unaltered in vasectomy; if it be important, say in certain cases of sexual perversion, to destroy these also, then the whole contents of each spermatic cord may be ligatured and a portion excised (spermectomy). Belfield of Chicago, writing of vasectomy, says it "is an office operation; it is painlessly performed in a few minutes under cocaine anesthesia, through a skin cut half an inch long; it entails no wound infection, no confinement to bed, it is less serious than the extraction of a tooth."

The Indiana Legislature, in March, 1907, passed a bill author-

izing the sterilization of "confirmed criminals, idiots, imbeciles and rapists" in the State institutions of Indiana; since then more than 800 convicts have been sterilized; in more than 200 of these the operation was done at their own request.

At this time I prefer not to make any specific recommendations; the important thing for us to do, it seems to me, is to take the whole matter of race-improvement under consideration, to inform ourselves and the citizens of Maryland of the conditions which prevail and to try to find out the methods of bettering them. It will not be difficult to interest many minds here in the eugenic ideal, and before long some practical measures may be adopted which will help. "A good tree cannot bring forth evil fruit; neither can a corrupt tree bring forth good fruit."

A SPECIAL report on birth registration is being prepared under the direction of Dr. Cressy L. Wilbur, Chief of the Division of Vital Statistics of the Bureau of the Census, for the first annual meeting of the American Association for Study and Prevention of Infant Mortality, which will be held in Baltimore in November. The report of the committee on birth registration will be presented at the session on Municipal, State and Federal Prevention, of which Dr. Wm. H. Welch is chairman.

The meeting will open with a general session on November 9. On the tenth and eleventh there will be four special sessions, as follows:

Municipal, State and Federal Prevention—Chairman, Dr. Wm. H. Welch, Johns Hopkins Medical School, Baltimore; secretary, Dr. John S. Fulton, secretary-general International Congress on Hygiene and Demography, Washington.

Medical Prevention—Chairman, Dr. L. Emmett Holt, 14 West 55th street, New York city; secretary, Dr. Philip Van Ingen, 125 East 71st street, New York city.

Educational Prevention—Chairman, Dr. Helen C. Putnam, chairman of the committee to investigate the teaching of hygiene, appointed by the American Academy of Medicine, 1903, Providence, R. I.; secretary, Prof. Abby L. Marlatt, Department of Home Economics, University of Wisconsin, Madison, Wis.

Philanthropic Prevention—Chairman, Dr. Hastings H. Hart, Director Department of Child-helping, Russell Sage Foundation, 105 East 23d street, New York city; secretary, Mr. Sherman C. Kingsley, Superintendent United Charities, Chicago, Ill.

The headquarters of the association are in the Medical and Chirurgical Faculty Building, 1211 Cathedral street, Baltimore, Md.

For information or circulars write to the executive secretary at this address.

THE PATHOLOGY OF PELLAGRA.*

By C. W. G. Rohrer, M. A., M. D., Ph. D.

Associate Professor of Pathology and Assistant in Genito-urinary Diseases, College of Physicians and Surgeons, Baltimore; Medical Assistant to the State Board of Health of Maryland.

Introductory.

OF that triad of preventable diseases—tuberculosis, pellagra and uncinariasis—which recently have become of international interest and are daily growing in importance, the newest and least understood is pellagra. The sudden and widespread looming up of this disease, together with its obscure etiology and high fatality, tend to make it one of the greatest scourges of modern times.

Down to date (April 28, 1910) seven cases of pellagra, with five deaths—a mortality of 71%—have been reported in Maryland. Four of these seven cases, all fatal, occurred in the Mercy Hospital, Baltimore, two of which came to the autopsy table. The clinical histories of these four patients have been ably presented to this society by my predecessors, Drs. William F. Lockwood and Harvey G. Beck. It remains for me to discourse briefly on their pathology. Before doing so, however, I wish to tabulate in chronological order the seven Maryland pellagrins.

Summary of the Cases of Pellagra Occurring in Maryland.

Case 1. Female, white, aged 57 years. Seen by Dr. William S. Thayer, November 18, 1905. Improved.

Case 2. Male, white, aged 35 years. Also seen by Dr. William S. Thayer, May 14, 1909. Improved.

Case 3. Female, white, aged 52 years. Died at Mercy Hospital, August 20, 1909.

Case 4. Female, white, aged 55 years. Died at St. Agnes' Hospital, November 26, 1909.

Case 5. Female, white, aged 40 years. Died at Mercy Hospital, April 12, 1910.

Case 6. Male, white, aged 61 years. Died at Mercy Hospital, April 17, 1910.

Case 7. Male, white, aged 37 years. Died at Mercy Hospital, April 28, 1910.

Pathology.

The pathology of pellagra is not constant. Different observers have described different pathological changes. These are usually discussed under the following three headings:

1st. The changes in the intestinal tract.

2d. Changes in the nervous system.

3d. The changes in the skin.

The changes in the intestinal tract consist of atrophy of the muscular coat, with intense hyperemia and occasionally ulceration.

The most constant post-mortem lesion is alleged to be in the

*Read by title at the one hundred and twelfth annual meeting of the Medical and Chirurgical Faculty of Maryland, held at Baltimore, April 26, 27 and 28, 1910.

lateral columns of the spinal cord. This condition is one of degeneration, and it is most pronounced in the dorsal region. Practically no changes are seen in the lumbar cord.

The skin changes are erythematous in type. At first there is congestion, followed later by pigmentation, and finally by desquamation.

Of the four cases of pellagra occurring at the Mercy Hospital, which have just been described by Dr. Lockwood and Dr. Beck, two came to the autopsy table. They were cases 3 and 6 of the series of seven cases of pellagra which have occurred in Maryland.

Our first pellagra autopsy was performed on a chronic, recurrent case of the disease in August of last year (1909). A striking feature was the presence of numerous granuloma-like bodies. When examined by the microscope these small tumor-like nodules or granulomata ("pseudotubercles") are seen to be composed of a necrotic center surrounded by spindle-shaped cells and small round cells.

These granulomata are most abundant in the walls of the superficial blood vessels of the lungs, especially those of the upper lobe of the right lung. Next to the lungs rank the superficial blood vessels of the brain. Granulomata are also found in the stomach, intestines, spleen, kidney and uterus.

Another feature is the intense congestion noticeable in practically all the tissues and organs. An extreme degree of gastropnoia and enteropnoia was also pointed out at the autopsy.

The liver showed chronic passive congestion, with numerous bacterial emboli in its smaller vessels.

The stomach at its lower fourth is encircled by many varicose veins. Attached to several of these veins is a polypoid growth.

The kidneys contain several small cysts, and show a condition of chronic diffuse nephritis. Numerous necrotic areas are also seen. The cortex is narrow, measuring but one-eighth of an inch.

The heart weighed but five and one-half ounces, and its interior was filled with white clot. The proportion of the weight of the heart to the weight of the body was as 1 to 233, the patient having been reduced to 80 pounds in weight. The heart also showed the condition known as "drop-heart."

With the exception of slight degeneration of the lateral columns of the cervical portion, the spinal cord shows no conspicuous change.

The blood-vessels of the brain contain numerous granuloma-like masses. The brain weighed nearly forty-four ounces.

The skin shows degeneration of its epidermic layers. The deeper of these have been transformed into keratin; the superficial layers have become gangrenous. The *cutis vera*, or true skin, shows little or no involvement.

At our second pellagra autopsy performed on the 17th of the present month (April, 1910), but few granulomatous masses

("pseudotubercles") were found. These were confined to the lungs.

There was intense erythema or congestion of the entire alimentary tract. The rectum showed lesions which were probably healed ulcers.

The mesenteric lymph-glands were markedly enlarged. This was one of the most interesting features noted at this autopsy.

The brain showed edema, with congestion of its anterior portions.

The skin lesions, confined chiefly to the hands and wrists, consisted in erythema, pigmentation and desquamation of the cuticle.

To the naked eye the remaining tissues and organs appeared normal, excepting the thyroid body, which was atrophied.

Microscopical sections from this second pellagra autopsy have not been studied.

The subject of pellagra is of growing importance, and it is hoped that these few scattered remarks will stimulate an increased interest in the matter.

Maryland physicians having suspected cases of pellagra should seek the co-operation of the city or State departments of health.

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This book was written for the purpose of supplying nurses in training with a book adapted to the special field of nursing in diseases of the eye, ear, nose and throat. While sufficiently comprehensive, it is not so fulsome as to be impractical. The germ theory of disease, antiseptics, disinfection of room and clothing, sterilization, preparation of the operating room, the nurse's duties at and after operation and in emergencies, the management of troublesome children, the feeding and care of infants, common remedies in the treatment of the eye, ear, nose and throat, will be found useful and instructive to nurses in general.



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Under the Direction of the Secretary of the State Board of Health

STATE DEPARTMENT OF HEALTH.

From the Bureau of Communicable Diseases (Dr. C. W. G. Rohrer).

SANITARY SURVEY OF EASTON.

General Remarks.—A complete sanitary survey of the City of Easton, Talbot County, was made June 28, 29 and 30, 1910. The survey was made upon request of the Mayor, the Honorable Martin M. Higgins. The unselfish devotion of Mayor Higgins to the welfare of his constituents could be emulated with profit by the mayors and governing officers of other cities and incorporated towns in Maryland. His course and laudatory example are highly commended by the State Board of Health of Maryland.

Scope of the Work.—The location of the City of Easton and its natural surroundings were first considered. These were found to be ideal. Facts bearing upon Easton as a residential city, and the prevailing types of architecture, were also duly noted and described. Interesting comparisons with former years were made.

The subject of vital statistics was next investigated. It was ascertained that many colored births in Easton go unreported. The city physician and the Mayor were advised to this effect. Infectious diseases were found (scarlet fever may be cited as an example) not always to have been reported. Tuberculosis, or "The White Plague," to use Dr. Oliver Wendell Holmes' phraseology, is a glaring exception, Easton and Talbot County ranking first in the State in the recording of tuberculous cases. The death rate in children was found to be exceptionally small.

Milk Supply.—Samples of milk were collected from nine of the ten dairymen supplying the City of Easton and submitted to chemical and bacteriological scrutiny. The bacteriological tests were unreliable, owing to the immoderately hot weather having wrought changes in the milk. Chemically the nine samples were

of exceptional quality, and none of them contained preservatives of any kind. The tenth dairyman was missed, and hence no sample from him was taken.

Garbage Collection and Disposal.—Garbage collection and garbage disposal are under the control of the municipal authorities. Easton has no sewerage system. A sewerage system is the crying need of the City of Easton. The outdoor toilets are usually of the surface type. Box toilets are recommended. Many of the toilets and backyards in the colored sections of the city were condemned as insanitary.

Water Supply.—The water supply of Easton is obtained from artesian wells, and could not be improved upon. The depth of the deepest of the six artesian wells supplying Easton is 1011 feet. The generous amount of 50 gallons *per capita* is the average daily allowance. The ice supply, chiefly artificial, is also good.

Meat and Provision Stores.—The grocery, meat and provision stores were inspected and pretty generally found to be in good shape. Several dealers, however, were ordered to do a little cleaning up. The fish market was not in as cleanly a condition as it ought to be. The same ruling applies to the public slaughter house.

Creeks and Water Courses.—The so-called North Drain and the South Drain, two streams running through Easton, were explored and investigated. These two streams are largely used for purposes of sewage disposal—certainly a very questionable procedure. Each drain has about 42 pollutions. This condition of affairs can scarcely be properly remedied until the City of Easton will have installed an up-to-date sewerage system.

Recommendations and Conclusions.—These can be summarized as follows:

1. Taking a comprehensive view of the City of Easton, its general sanitary condition is indeed good. A sewerage system is the one thing needed.
2. A better registration of colored births and complete reports of all the infectious diseases are also desired.
3. Box toilets, and box toilets only, are advocated for Easton.



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This Department is Under the Direction of the Commissioner of Health

A NEW METHOD FOR BILE SPECIMENS OF BLOOD, FECES AND URINE, AND THE RESULTS OF SUCH CULTURES MADE FOR PHYSICIANS.*

By William Royal Stokes, M.D., and Harry W. Stoner, M.D.

THE following article is based upon a study published in the *Journal of Infectious Diseases*, Vol. VII, No. 3, May 20, 1910, p. 457, and the portions in quotation marks are literal quotations from this article. The number of cases, however, which we have examined will be found changed, and as we wish to offer the physicians of the City and State as many opportunities as possible, we will state in this article the methods used for making cultures from the blood, feces and urine of suspected clinical or carrier cases.

The physician of today occupies a dual position. His first duty is toward his patient, but there is a second responsibility which he cannot avoid, namely, the prevention of the spread of communicable diseases. It is important to make an early diagnosis of typhoid fever, but it is also essential to prevent the spread of this disease, and the purpose of this paper is to describe a method which may be of assistance to physicians in both of these respects.

"In order to enable the physician to make an early diagnosis in typhoid fever, and also to detect the presence of typhoid bacilli in the feces and urine of convalescents and carrier cases, we have been using two outfits. One of these outfits can be used for transporting bile through the mail, and this outfit has been submitted to the postal authorities and permission has been granted to use it. Specimens of blood, feces, urine and other materials from typhoid fever patients can be inoculated into the bile. These specimens can be sent by mail to the laboratory to solve the problems of diagnosis

*From the Bacteriological Laboratory of the State and City Boards of Health, Baltimore, Md.

and preventive medicine, and each outfit contains blanks and directions which will be described later.

"The specimen for examination is placed in five cubic centimeters of Conradi's bile medium in a test tube, stoppered with a rubber stopper and covered with a rubber cap. This test tube is then placed in a cylindrical tin box made of I. C. bright tin plate with soldered joints. This box is closed by a metal screw cover and a rubber or felt washer. The test tube contained in this tin box is completely and evenly surrounded on all sides by closely-packed absorbent cotton. The cylindrical tin box with its contents is placed upside down in a larger cylindrical tin box, prepared in exactly the same manner as the inner tin box, excepting that the larger tin box is lined on the inside of the sides and bottom with compressed paper not less than 3-16 of an inch in thickness, in

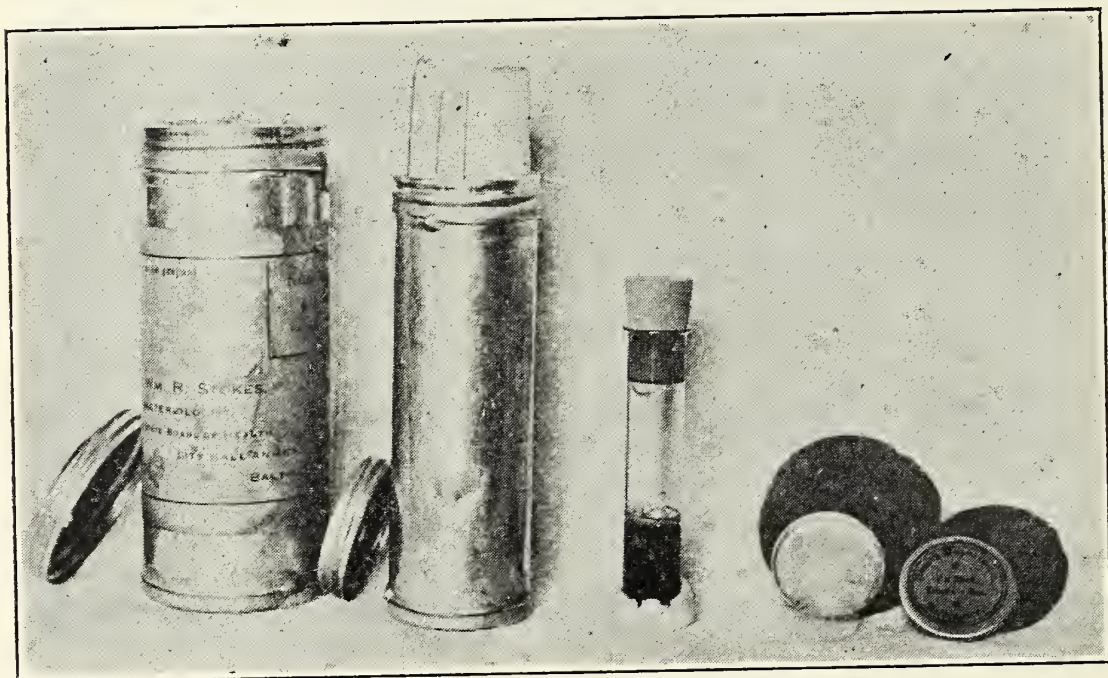


FIG. 1.

such a manner as to fit snugly the inside tin box. Fig. 1 shows this outfit.

"For work within the city limits we have devised a simpler outfit, which, however, cannot be sent through the mail. These outfits are distributed bi-monthly to our 108 culture stations, and the physician has simply to inoculate the tube of bile with blood, feces, urine or other material and send it by a messenger to the department. The test tube containing bile has a rubber stopper and is wrapped in cotton and placed in a cylindrical pasteboard box with a screw top. Fig. 2 is a photograph of this outfit.

"Both of these outfits contain an aluminum box in which drops of blood can be collected according to the Westbrook method. One milligram of dried blood is mixed with 100 cubic millimeters of distilled water, and this dilution mixed with an equal quantity of a 24-hour peptone solution culture of the *Bacillus typhosus* gives us a dilution of 1 to 200 of dried blood. Since blood loses

three-fourths of its weight in drying, this corresponds to a dilution of 1 to 50 of fluid serum. We find that bouillon cultures give too many clumps in the control.

"The drops of blood are collected on the top of the box, and these must be thoroughly dried before the lid is put on the bottom of the box. The bottom of the box contains four cover glasses for blood smears, and cases of malaria and relapsing fever can be diagnosticated with these smears.

"By using these outfits the physician loses none of the advantages of the ordinary Widal and blood-smear tests, but in addition the bacillus of typhoid fever may be detected in the blood or feces before the Widal test is positive, since hospital records show that the typhoid bacillus is present in 90 per cent. of the cases during the first week of the disease. These outfits, however, can also be

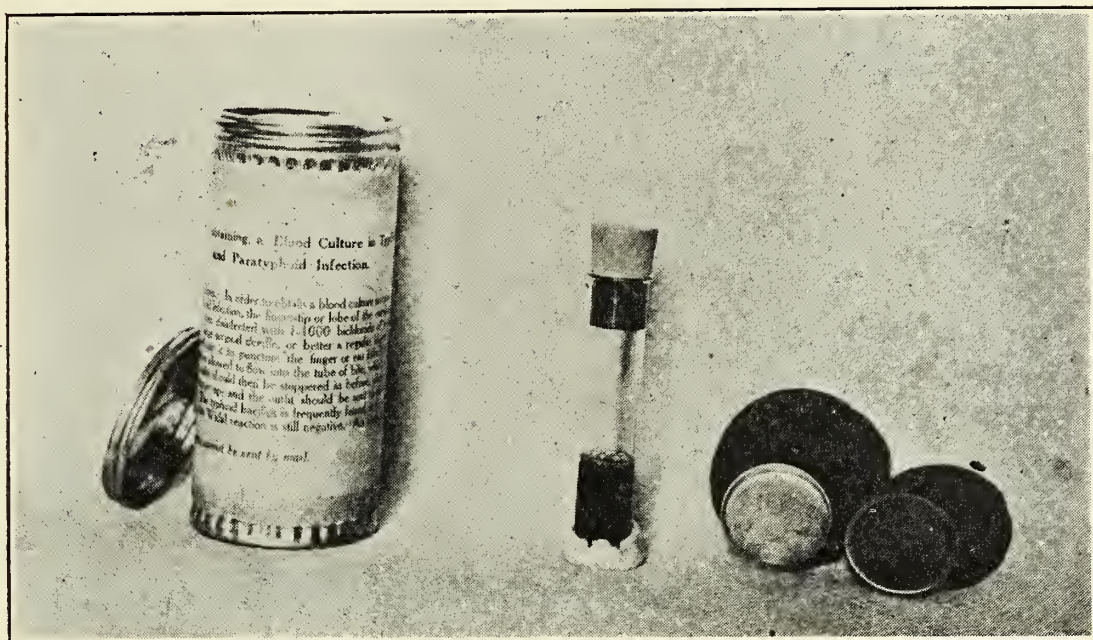


FIG. 2.

used to determine when convalescents are free from typhoid bacilli, and there is just as much reason to examine the feces and urine of convalescent patients in this disease as it is to obtain negative cultures from diphtheria patients. They can be used for detecting the presence of carrier cases in institutions and houses where other causes of typhoid fever have been eliminated, and we have already been able to solve several problems of this nature by means of their use.

"We believe that in the future managers of large hotels, superintendents of various institutions in which many persons are gathered, dairymen, and even careful housewives, will wish to know whether cooks or persons handling raw foods are still infected with the typhoid bacillus. It is not inconceivable that in the future certificates will be demanded of such persons showing that the feces and urine are free from typhoid bacilli, as it is only in such positions that these carrier cases are dangerous."

Before describing our results we would add that Conradi's bile medium consists of 100 grammes of Witte peptone and 100 grammes of glycerin in 900 c.c. of sterile bile.

The outfits contain the following blanks and directions, which are wrapped around the outside of the cotton-covered test tube:

Directions for Cultures from the Feces and Urine of Cases of Typhoid Fever, Paratyphoid Infections, Epidemic Dysentery, and Convalescent or Carrier Cases from such Diseases.—Fifteen drops of urine should be put in the bile tube in order to detect the presence of the bacteria in this fluid. In order to take a culture from the feces, simply obtain about one gramme or 15 grains of the feces on the cotton swab which will be found in the outfit. Rub this up in the bile and then burn the swab. Place the bile tube in the outfit in the same way it was found, and send to the department. Wrap the bile tube carefully in cotton before replacing it in the case. Please fill out the blanks to be found in the outfit. These outfits cannot be sent by mail.

Directions for Obtaining a Blood Culture in Typhoid Fever and Paratyphoid Infection.—*Blood Cultures.*—In order to obtain a blood culture in cases of typhoid fever or paratyphoid infection, the finger tip or lobe of the ear should be carefully washed and then disinfected with 1-1000 bichloride of mercury or 5 per cent. carbolic acid. A large surgical needle, or, better, a regular blood stilet should be used, after sterilizing it, to puncture the finger or ear lobe. Ten drops of blood should then be allowed to flow into the tube of bile, which will be found in the case. The tube should then be stoppered as before, placed in the case with the rubber stopper up, and the outfit should be sent to the department, but not by mail. The typhoid bacillus is frequently found in the first week of the disease, when the Widal reaction is still negative. An early diagnosis may be thus secured. These outfits cannot be sent by mail.

Method.—Material from the gall bladder is placed in a tube containing 5 c.c. of bile, which is incubated for 24 hours. Plates are made in Wurtz's agar and colonies are picked and mixed in a few drops of sterile bouillon in a sterile Petri dish. These suspended colonies are numbered, stained by Gram's method, and those that are Gram negative are made into hanging drops together with antityphoid serum, which agglutinates the typhoid bacillus at a dilution of 1 to 100,000. A dilution of 1 to 10,000 is used for testing the agglutination of the suspected organisms, and controls are made for testing the motility. Such colonies as are agglutinated within two hours are considered positive for typhoid, and are then inoculated into litmus milk, gelatin, potato, and glucose, lactose and saccharose bouillon in fermentation tubes. All of the colonies tested in this manner gave characteristic cultural reactions in these media.

BACILLUS TYPHOSUS IN URINE.

"The bacillus typhosus has been isolated from the urine by a number of observers. It is seldom found before the end of the

second week of the disease, and may very rarely persist in the urine for years, Young having demonstrated the organism in a case of post-typhoid cystitis seven years after the patient had recovered from typhoid fever, and Hunner and Simon 20 years after the attack. Petruschky found that the excretion of typhoid bacilli through the urine of typhoid patients is relatively seldom, and that they are never found at the beginning of the disease, and their isolation cannot be used as a diagnostic method. He also found that the secretion of typhoid bacilli in a few cases reached millions of organisms in 1 c.c. of urine, and these may persist for weeks, reaching into convalescence, and is of great importance in the prophylaxis of typhoid infection. In 50 urines examined the typhoid bacilli were found three times. In one of his cases the bacilli were first observed at the beginning of the third week and lasted two months, when the cultures proved negative. In the other two cases they only appeared in the urine in from 6 to 10 days after the fever had disappeared and were present from four and eight weeks, respectively. In one case they were followed by a hemorrhagic nephritis.

"Richardson, in 38 cases studied, found typhoid bacilli in the urine in 9, or 24 per cent., but only in the third week of the disease.

"Horton-Smith reports a case of pyuria, beginning on the 30th day and lasting throughout a relapse, in which there were many typhoid bacilli present. Out of 12 cases examined he found the organism present in only two urines. He studied the length of time that the bacilli persisted in the urine in 10 cases and found the time to be 8, 21, 25, 30, 70, 13, 18, 19, 34 and 40 days. The figures up to 13 are absolute, showing when the bacilli disappeared, but from 13 on no negative cultures were made, and they were known to be positive up to that time. The average duration, therefore, was 30 days after the temperature was normal.

"Herbert examined 228 urines of 98 convalescents and found 18, or about 18 per cent., with typhoid bacteriuria, but Thomas, in 196 convalescents, found only 7 positive for typhoid bacilli.

"Petruschky, Richardson and Horton-Smith all failed to find the typhoid bacillus in the urine until after the fifteenth day, and Hiss examined 75 urines of typhoid cases during the first two weeks of the disease without finding typhoid bacilli in any of these cases. It can be safely stated, therefore, that these bacilli only appear after the beginning of the third week, and even then they are only found in about 7 per cent. of examinations.

"Even in convalescence they are not frequently found, the average of the different authors showing only 5 per cent. of positive results. Herbert found by very exact observations in hospital cases that the typhoid bacilli disappear from the urine in from 3 to 27 days after the temperature has reached the normal, the average being about 15 days. The paratyphoid bacillus is apparently found in the urine in about 4 per cent. of cases, and in 3 per cent. of convalescent patients."

We have studied cultures made from 88 specimens of urine and found the bacillus typhosus in only two cases and the bacillus paratyphosus in one case. Both patients were convalescent. We know that a number of the cultures studied were from patients that never had typhoid fever, as many were examined in institutions for carrier cases.

Method.—Fifteen drops of urine are collected in a tube containing 5 c.c. of sterile bile medium. This is incubated for 24 hours and plates made on Hesse's fluid agar medium. Organisms were considered positive only when they agglutinated the aforementioned anti-typhoid serum at a dilution of 1 to 10,000 within two hours, and that gave all the other cultural characteristics of the typhoid bacillus.

BACILLUS TYPHOSUS IN STOOLS.

"It was formerly believed that the stools of typhoid patients were always swarming with the causative bacillus. This belief was in part due to the fact that the earlier bacteriologists claimed to have found the organisms in nearly all stools from typhoid patients without difficulty. Since the introduction of the agglutination test and the various differential culture media by Hiss, Drigalski-Conradi, Hesse and others the isolation of the typhoid bacillus from the stool has become much simplified and its recognition easy. However, in 5844 specimens of typhoid stools examined by various authors during the disease the bacillus was present in 1185 times, or in 20 per cent. of the cases. Simon examined 870 stools and Müller and Gräf 255 stools and noted the day of the disease of each examination.

"It is important from the standpoint of preventive medicine to determine how frequently the stools contain typhoid bacilli after convalescence has set in, and the percentage of positive findings after the temperature has become normal. In 703 cases examined the typhoid bacillus was found 19 times, or in 2 per cent. of instances. This study also showed that the paratyphoid bacillus was found 53 times in 952 cases during the disease."

Our studies would indicate that the organisms are present in the stools oftenest in the second week of the disease, and are found quite frequently in the first week, and begin to disappear after the third week.

"We have made a study of 72 cultures from the stools. The typhoid bacillus was isolated from 11, or in 28 per cent. of cases, and the paratyphoid bacillus in 12, or 16 per cent. of cases. From one case both the typhoid bacillus and paratyphoid bacillus were isolated. Five of the positive cultures were from carrier cases, one having had typhoid fever 15 years before; a second, 8 years before; a third, 7 months before, and in two cases, from which the organisms were recovered, no history of typhoid could be obtained. Outbreaks of typhoid were traced to both of these cases, however, and, as pointed out by Busse, it is probable that many of these bacilli carriers do not develop typhoid fever even when the bacilli

get into the blood. He cultivated the organisms from the blood of four persons with a severe infectious disease, but without any sign of typhoid fever during the life or at autopsy."

Method.—About one gramme of feces is collected on a sterile swab and immediately rubbed up in the tube of bile. This is incubated for 24 hours, and plated out in the same manner as were cultures from the urine.

BACILLUS TYPHOSUS IN THE BLOOD.

"In 1884 Gaffky isolated the typhoid bacillus from the spleen in a case of typhoid fever, and expressed the possibility of its being present in the blood. Castellani was the first to isolate the typhoid bacillus from the blood during life. Since then the organism has been secured from the blood by many investigators, and these observations were all collected by Coleman and Buxton in 1907. We have added a number of cases from the more recent literature, bringing the data up to the present time. Much of the earlier work was to establish the fact that typhoid fever was a true septicemia, and large quantities of blood was used in making the cultures. In 1901, however, Conradi showed that bile possessed the property of keeping blood fluid, and in 1906 he proposed his method for hastening the growth of the bacilli in small quantities of drawn blood, so as to make the culture available for diagnostic purposes.

"In our examination of 262 cultures made from the blood, the bacillus typhosus was isolated from 52 specimens; the bacillus paratyphosus from 4 specimens; the bacillus pyocyaneus from 2 specimens, and the bacillus coli from 2 specimens. From 22 cultures Gram staining micrococci were obtained, and several of these were worked out and proved to be the staphylococcus albus, and were probably derived from the skin of the patient in drawing the blood. One hundred and twenty-two of the specimens were both negative culturally and with the agglutination test, so we can consider our 47 positive cultures as coming from 68 positive cases, giving us a positive percentage of 69.1. Cultures were made from the first up to the ninetieth day of the disease. The earliest positive cultures were obtained from two cases of two days' duration. Four positive cultures were obtained on the third day of the disease, six on the fourth and three on the fifth day. Twenty-four, or 51 per cent., of these positive cultures were obtained in the first week of the disease, 19, or 40 per cent., in the second week, and three, or 6 per cent., in the third week. In one culture that was positive, the duration of the disease was not obtained. Forty-eight positive Widal reactions were obtained from these 68 specimens. Eighteen were obtained in the first week, 20 in the second week, 4 in the third week, 3 in the fourth week, and 3 in the duration was not secured."

Method.—In 62 of the cultures the bile was incubated overnight, and the method recommended by Peabody of inoculating the water of condensation in a tube of blood serum was followed

and controlled by making plates with Conradi-Drigalski medium. The bacillus typhosus was recovered from the plates of 18 of these cultures, but in only nine instances were we able to secure a motile organism from the water of condensation in the blood-serum tube, and in one of these the organism was a Gram positive bacillus. The remaining 128 cultures were made by merely incubating the bile tube overnight, inoculating Wurtz agar and making plates and incubating for 24 hours. At the end of this time typhoid-like colonies were suspended in a few drops of sterile bouillon in a previously-marked sterile Petri dish, and the organisms from each suspension stained, and, if Gram negative, hanging drops were made with antityphoid serum, with an agglutinating strength of 1-100,000, at a dilution of 1-10,000, together with a control hanging without serum. If at the end of two hours agglutination and cessation of motility has occurred, the case is reported to the physician as positive. All positive colonies are inoculated into litmus milk, gelatin, potato and glucose, lactose and saccharose bouillon in fermentation tubes, and in every instance the organisms gave all the cultural characteristics of the bacillus typhosus.

"By this method we are enabled to make reports to the physician within 48 hours after receiving the specimen, and while not so rapid as the Widal method, when it is considered that several of our positive cultures were obtained in the second and third day of the disease, the delay in getting the report is fully compensated for.

"It is interesting to note that this method will distinguish rare infections caused by the bacillus pyocyaneus and bacillus coli from typhoid or paratyphoid infections, as all three organisms (two of bacillus pyocyaneus and one of bacillus coli) are agglutinated with the patient's own blood. The paratyphoid bacilli isolated also agglutinated with the patient's own blood at a dilution of 1-50 or 1-200 of dried blood."

CONCLUSIONS.

From our experience in making these various cultures for the physicians of the city and State, we have come to the conclusion that this method offers many advantages both in clinical and preventive medicine. The outfit contains a box for the Widal and malarial tests, and these can be made in addition to the blood culture. The Widal test is often not positive until about the tenth day, whereas the blood culture contains the typhoid bacillus in about 80 per cent. of cases during the first week. This enables the physician to make an early diagnosis.

This method is also very important in detecting carrier cases on dairy farms and in large institutions, and all individuals handling raw food should be examined in order to prevent the various local outbreaks which we now recognize as due to carrier cases.

We now believe that cases simulating typhoid fever are at times produced by other intestinal organisms, such as the paratyphoid group, the bacillus pyocyaneus and the colon bacillus. This method enables physicians to recognize these rarer cases of infection, and

can be also used for diagnosis by cultures from the stools in paratyphoid, typhoid and dysenteric infections.

We would therefore urge upon the physicians of this State to send for outfits for these various purposes, and it is soon the intention of the State Board of Health to place them regularly among our other culture supplies, as we have already done with the city limits of Baltimore.

SEMI-ANNUAL MEETING.

The semi-annual meeting of the Medical and Chirurgical Faculty of Maryland will be held at Annapolis, Md., September 12, 13 and 14. The headquarters will be at Carvel Hall, which has extended a special rate of \$2.50 a day to the visiting physicians. Meetings will be held in the old Senate Chamber. Trains leave Baltimore on the hour and half-hour from Camden Station via the Annapolis Short Line, round-trip, 75 cents, and by the Washington, Baltimore and Annapolis 35 minutes after the hour, round-trip, \$1.00.

On the afternoon of the 12th Governor Crothers will receive the members of the Faculty at the Executive Mansion. After the Governor's address of welcome, the Mayor of Annapolis, Hon. James F. Strange, will make a few appropriate remarks. In the evening a reception will be given by the Chamber of Commerce. Tuesday morning, the 13th, will be given over to the State Board of Health, who have arranged for the following program:

Introduction.—Dr. Marshall Langton Price.

Discussion of Bureau of Bacteriology.—Dr. William R. Stokes.

Discussion of Bureau of Communicable Diseases.—Dr. C. W. G. Rohrer.

Discussion of Bureau of Chemistry.—Dr. W. B. D. Penniman.

Discussion of Bureau of Vital Statistics.—Dr. W. Frank Hines.

Discussion of Food and Drug Act.—Charles Caspari, Phar. D.

Discussion of Legal Aspects of Public Health Administration.—Hon. William Pinkney Whyte, Jr.

In the afternoon an inspection will be made of the Naval Academy, and a band concert given.

In the evening the Anne Arundel County Medical Society will entertain by a reception and dance at Carvel Hall, just prior to which will be delivered the address by the president, Dr. Franklin Buchanan Smith. On Wednesday morning, the 14th, a conjoint meeting will be held with the Maryland Psychiatric Society, program of which session occurs on page 312 of this issue. A yachting trip on the Chesapeake Bay on Wednesday afternoon will give an enjoyable and recreative ending to the meeting.



MARYLAND LUNACY COMMISSION.

ARTHUR P. HERRING, M.D., Secretary.

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JOHN D. BLAKE, M.D.

R. MARKLEY BLACK, M.D.

ATTORNEY-GENERAL ISAAC LOBE STRAUS, ex-officio.

This Department is Under the Direction of the Secretary of the Commission

THE ninth meeting of the Maryland Psychiatric Society will be held in conjunction with the semi-annual meeting of the Medical and Chirurgical Faculty of Maryland at Annapolis Wednesday, September 14, 1910, at 10 A. M., when there will be a symposium on the "Treatment of the Insane."

1. Care of Depressed and Suicidal Patients. By Dr. Clarence B. Farrar.
Discussed by Dr. Lewis Gundry.
2. Care of Excited and Violent Cases. By Dr. H. D. Purdum.
Discussed by Drs. R. F. Gundry and Henry D. Fahrney.
3. Care of Demented and Untidy Patients. By Dr. F. J. Flannery.
Discussed by Drs. Chas. J. Carey and Cornelius Deweese.
4. Care of Epileptic Imbeciles. By Dr. F. W. Keating.
5. Care of Epileptic Insane. By Dr. J. Clement Clark.
6. The Remedial, Economic and Ethical Value of Employment of Patients as Utilized in State Hospitals. By Dr. Robert P. Winterode.
Discussed by Drs. J. P. Wade and W. R. Dunton, Jr.
7. A Plan for the Prophylaxis of Mental Disorders and the After-Care of Convalescent Patients by Organized Social Service. By Dr. A. P. Herring.

Discussed by Mr. N. G. Grasty, secretary Sup. City Charities; Mr. J. W. Magruder, secretary Federated Charities, and Mr. Louis H. Levin, secretary Federated Jewish Charities.

Papers limited to 20 minutes; discussions to five minutes.

Session will be held in old Senate Chamber.

Trains leave on the hour and half-hour via the Annapolis Short Line from Camden Station; round trip 75 cents; also via the W., B. & A. 35 minutes after the hour; round trip \$1.

Wednesday, 3 P. M., yachting trip on the Chesapeake Bay.

The physicians to "Country Homes and Asylums" are specially invited to attend this conference.

DR. WM. RUSH DUNTON, JR.,

DR. J. PERCY WADE,

DR. ARTHUR P. HERRING,

Committee of Arrangements.

Book Reviews.

DISLOCATIONS AND JOINT FRACTURES. By Frederic J. Cotton, A.M., M.D., First Assistant Surgeon, Boston City Hospital; Assistant Professor of Clinical Surgery in Tufts College Medical School, Boston. Octavo of 654 pages, 1201 original illustrations. Philadelphia and London: W. B. Saunders Co. Baltimore: Medical Standard Book Co. 1910. Cloth, \$6.00 net; half morocco, \$7.50 net.

Embodied in the context of this book are the latest developments in joint fracture and dislocations. The style is easy and the arrangement of the subject matter natural. Any contribution which is offered as a guide to that important field of surgery (injury to and about the joint) is a welcome addition to medical literature. Just what to do under certain circumstances in the handling of this group of cases is extremely vexatious. Therefore we welcome this volume with its exceptional practical hints, which are based evidently on actual contact. For no one but a person who has had a large personal experience with injuries of this character could present such a masterful exposition of the subject. The author justly states the results in practice are better today than ever, and that more men today than ever before are competent to treat fracture. Further, he says, the general practitioner should be and will be able to treat most fractures, and, again, we must not be satisfied with poor results without further attempts for betterment by either operative or non-operative means; an X-ray plate two weeks after the injury would obviate most instances of disaffection or legal procedure in cases of fracture and luxation. The text on pathology, diagnosis, etiology and treatment is along modern lines and can be relied on as trustworthy. The book is an excellent guide to the general practitioner. It is well written and illustrated. The more we read it the more we are impressed with its sterling qualities. We take great pleasure in recommending it to the profession.

HAND-BOOK OF ELECTRO-THERAPEUTICS. By William James Dugan, M.D., Lecturer on Electro-Therapeutics at Jefferson Medical College, Philadelphia; Physician-in-Charge of the Electro-Therapeutic Department and Assistant in the Out-Patient Neurological Department of Jefferson Hospital; Fellow of the American Electro-Therapeutic Association. With 91 illustrations. Philadelphia: F. A. Davis Co. 1910. Cloth, \$2.00 net.

But little is known by the general practitioner about electrotherapeutics, the proper instruments and when, and more important still, when not to invoke the aid of electricity. This little book is written in simple concise understandable English. The subject has been made as simple as possible, all mooted theories have been passed by, long diversions on the manner of arriving

at the various electrical formulæ discarded; in fact, all unnecessary or mysterious theories delegated to the larger books on the subject. Only those things that every practitioner should know about medical electricity are included.

The introduction embraces a slight historical account of the discovery and development of electricity as it pertains to medicine. There are several chapters devoted to the elements of electricity, galvanism, static electricity, faradic electricity. In the chapter on galvanism the several variety of cells (double fluid cell, single fluid cell, etc.), amalgamation, polarization, short-circuited cell, batteries, effect of the poles on the tissues, test for polarity, and so forth, are thoroughly described; in that on static electricity, static machines, electrodes for static machines, properties of static electricity, Leyden jars, drying a static machine, test for polarity on a static machine, methods of applying the static machine, static induced current, method of employing static induced current, roller massage, pencil discharge, and a number of other essentials required for intelligent management of the machine are clearly and concisely set forth. In the section on reaction of degeneration, the method for testing for reaction of degeneration, electrolysis, cataphoresis, sinusoidal current, high frequency currents, magnetism, together with the apparatus necessary for their production, receive due attention. The chapter on special therapeutics gives an insight into the manifold channels to which electricity can be turned for the treatment of mankind. This monograph should find its greatest field of usefulness as a text-book for students and a reference book for general practitioners.

DYSPEPSIA: ITS VARIETIES AND TREATMENT. By W. Soltan Fenwick, M.D. (Lond.), Doctor of Medicine of the University of Strassburg; late Physician to the Evelina Hospital for Sick Children, etc. Octavo of 485 pages; illustrated. Philadelphia and London: W. B. Saunders Co. Baltimore: The Medical Standard Book Company. 1910. Cloth, \$3.00 net.

The first chapter of this book is devoted to the various forms of dyspepsia and their differential diagnosis; the second to dyspepsia due to abnormalities of the gastric secretion (hyperacidity, hypersecretion, achylia gastrica); the third to dyspepsia due to the failure of the muscular power of the stomach; the fourth, that due to inflammation of the stomach; the fifth, that due to disturbances of the nervous mechanism of the stomach; the sixth, that due to displacements of the stomach; and chapters on dyspepsia due to the presence of foreign bodies and living creatures in the stomach, dyspepsia in infancy and old age, dyspepsia dependent on diseases of the other organs, intestinal indigestion. As can be seen, the author classifies dyspepsia according to its source and cause. There is no doubt that when a patient consults us for dyspepsia we are too inclined to look on it as an exceedingly simple malady, attributing it to some functional derangement of the stomach, and

seldom, if ever, look for its cause. Until comparatively recently but little scientific attention has been devoted to this subject, and as a result individuals suffering therefrom fell into the hands of all sorts of quacks. The sooner we realize that dyspepsia is a symptom of some other disorder and not a disease per se, the sooner will we treat this disorder more intelligently. This book may not contain the last word on dyspepsia, but it goes a long way towards clarifying the atmosphere of many of our inherited notions concerning this disease. If it accomplishes no other purpose than showing that indigestion is due to a great variety of causes, this book will not have been written in vain.

A MANUAL OF PERSONAL HYGIENE. PROPER LIVING UPON A PHYSIOLOGIC BASIS. By American authors. Edited by Walter L. Pyle, A.M., M.D., Member of the American Ophthalmological Society; Fellow of the American Academy of Medicine; Fellow of the College of Physicians of Philadelphia; Ophthalmic Surgeon to Mt. Sinai Hospital; Assistant Surgeon to the Wills Eye Hospital, Philadelphia, etc. Fourth edition. Revised and enlarged. Philadelphia and London: W. B. Saunders Company. Baltimore: The Medical Standard Book Co. Cloth, \$1.50 net. 1910.

This book is written in a popular style, so as to be available to the laity as well as to the medical profession. Until the present too much attention has been paid to the restoration of health after disease has set in; too little to the maintenance of health. Such knowledge as one should have regarding the proper hygiene of his digestive organs, of respiration, of posture, care of teeth, of skin, of nails, of hair, of the eyes, etc., are plainly set forth.

The causes and methods of transmission of diseases receive due attention. The water supply, plumbing and drainage come in for a few words. Foods, dietetics, burns and scalds are given some little space. The fact that three editions have been exhausted plainly indicates the popularity of the book. There is much useful information in the book, especially for the lay reader.

A TEXT-BOOK ON THE THERAPEUTIC ACTION OF LIGHT, INCLUDING THE RHO RAYS, SOLAR AND VIOLET RAYS, ELECTRIC ARC LIGHT, THE LIGHT CABINET. By Corydon Eugene Rogers, M.D., formerly Demonstrator of Anatomy in the University of New York City. With original illustrations. Published by the author. Chicago. Cloth, \$3.50 net.

This book is written to present to the medical profession the results obtained in the treatment of various distempers by what the author believes to be a new light ray which has the property of penetrating both the soft and osseous tissues. He admits that there have been failures; such has been the case with the X-ray, etc., but in many instances he has met with agreeable surprises. It is to record the successes that the book was written. The ray

is produced by a high power incandescent lamp, i. e., 300 candle power or over, so arranged within a reflector as to change the angularity of light emanating from it and to project within a predetermined area non-parallel beams crossing each other in sufficient number to form one or more brilliant spots. According to the writer he discovered when the brilliant spots were projected upon the human body, they not only penetrate, but pass entirely through the tissues. As proof of this assertion he inserts an illustration alleged to have been obtained from a negative within a plate-holder over which the palm of the hand had been placed and his rays allowed to pass through the hand. Epithelioma, cancer of the lip, pulmonary tuberculosis, lupus, tubercular osteitis, arthritis deformans, gout, and so forth, are claimed to have been cured or materially benefited under this line of treatment. This brief, but diversified list, is representative of the class of diseases this agent is supposed to benefit. Unless in the light of further investigation by unbiased investigators, something of value is evolved from the claim of the author, we cannot see that his book is of any value to the general practitioner.

GYNECOLOGICAL DIAGNOSIS. By Walter L. Burrage, A.M., M.D. (Harvard), Fellow of the American Gynecological Society; Member of the Obstetrical Society of Boston; Consulting Gynecologist to St. Elizabeth's Hospital; formerly visiting Gynecologist to St. Elizabeth's and the Carney Hospitals; Electro-Therapeutist and Surgeon to Out-Patients, Free Hospital for Women; Clinical Instructor in Gynecology, Harvard University, and Instructor in Operative Gynecology in the Boston Polyclinic. With two hundred and seven illustrations. New York and London: D. Appleton & Co. 1910. Cloth, \$6.00 net. Half leather, \$7.00 net.

This book is devoted entirely to the methods of gynecological diagnosis, those procedures employed by the gynecologist to make a correct diagnosis, with the exception of the methods of the pathological and bacteriological laboratories, which the author leaves to special books on those subjects. The book is written with the idea of aiding the general practitioner in perfecting himself in the essentials of gynecologic diagnostic technic. An important feature is differential diagnosis. One cannot but help being attracted by the simplicity of the diction and the practical tone with which the subject is handled. Theory is left out of consideration, utility being the keynote. Especial stress is laid on bladder and rectal affections. Unlike most books of this character, a chapter has been added on diseases of the breast, as properly speaking the breast is a part and parcel of the reproductive system and has an intimate relationship with the female pelvic organs. An attractive feature is a chapter on gynecological diseases of childhood. Every chapter is headed by a résumé of the contents with page references, and all the illustrations are alphabetically

indexed at the front of the book. The method of taking a history and its clinical interpretation is given at length.

Physical examination of the patient, both manual and instrumental, is clearly explained. The significance of the chief symptoms of pelvic disease is given due consideration. No claims are made as regards the introduction of new methods, merely those aids and methods which the author has found of service in his hands being included in the text. The reader's time is not taken up with an extended rehash of the anatomy of the pelvic organs, only sufficient anatomy being included to render the text clear. The excellent and numerous cuts add materially to the many admirable features of the book. Most attention is paid to the ordinary gynecological affections, those which arise in the practice of the practicing physician, the rarer maladies, as they should in a book of this character, receive but slight consideration. The author has performed his task well, and has presented to the everyday doctor a book of incalculable value. It is a book of undoubted merit, written by a man exceptionally well-equipped in his specialty, and one keenly alive to the needs of the general practitioner in the field of gynecologic endeavor.

NEPHROCOLOPTOSIS. By H. W. Longyear, M.D., Professor of Gynecology and Abdominal Surgery, Detroit Post-Graduate Medical School; Clinical Professor of Gynecology, Detroit College of Medicine; Gynecologist to Harper Hospital, Consulting Obstetrician to the Woman's Hospital, ex-President of the American Association of Obstetricians and Gynecologist. With 88 illustrations and a colored frontispiece. St. Louis: C. V. Mosby. 1910. Cloth, \$3.00 net.

This monograph of some 250 pages is of especial interest from the fact that the views expressed are those of the author rather than a compilation from the literature. Unlike much of the medical literature of today, the author has something new to tell, namely, that nephrocoloptosis is a result of stretching of the nephrocolic ligament. He also believes that the overlooking of this point has been the reason for the failure of a permanent operative cure in many instances. The book abounds with numerous cuts, illustrative of the anatomic conditions as found by the author, methods employed and mechanical devices used by the writer. The volume begins, as it should, with a chapter on anatomy and pathology, freely illustrated, followed by sections on etiology, diagnosis and treatment (mechanical, orthopedic, prophylactic, medical and operative). The volume is a distinct addition to surgical literature. The reasoning is sound and seems to clear the atmosphere of the surgical bug-bear, the cause of and cure of nephroptosis. The volume has the added attraction of a chapter on the report of cases in which the author permanently records the results of 56 operations. Time alone will prove or disprove the writer's suggestions, but to the mind of the reviewer the views expressed are reasonable.

MARYLAND MEDICAL JOURNAL

NATHAN WINSLOW, M.D., *Editor.*

Associate Editors:

THOMAS R. BROWN, M.D.
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JOSE L. HIRSH, M.D.
ALEXIUS MCGLANNAN, M.D.
A. SAMUELS, M.D.

BALTIMORE, SEPTEMBER, 1910

SOME THINGS OF WHICH WE OUGHT TO THINK.

PHYSICIANS have or should have a vital interest in the health of the community in which they live. There are many problems in Baltimore at the present writing which demand the concerted action of the profession for their correction. Among the most prominent of these are the numerous unsanitary disease-breeding alleys scattered here and there throughout the community. An unclean alley or street is a blot on civic pride, and a menace not only to the health of those so unfortunate as to be compelled to live there, but also of the rest of the citizens. There are, we are sorry to say, many noisome passageways of this character in our city. It is the duty of physicians as guardians of public health to demand of our city authorities the placing of these filthy by-ways in a tidy sanitary state.

Another problem confronting the City of Baltimore is the use of Gwynn Falls, a stream running through the beautiful Gwynn Falls Park as an open sewer. The odor arising from this cess-pool on a hot day is unbearable. In an up-to-date modern municipality such a condition should not be tolerated if for no other reason than the stench, but there are other reasons, for it has been proven beyond a doubt that typhoid and other enteric organisms find a fit abode in sewage until transferred to mankind on the legs of flies. The endangerment of the public health in such a manner is an awful responsibility for public officials to assume, especially when science has placed remedial measures within their hands. It is needless for us to mention the ways and means for the correction of this evil; suffice it to say that monetary considerations should not for one moment be allowed to enter into its prompt abatement. We should also think seriously of the dog question. With the numerous examples of the victims of rabies constantly before us, some practical way for the management of the city dog should be evolved. The mere pittance collected by the city in the way of dog licenses is not sufficient warrant for the subjection of one life to the danger of death by that dreadful malady, rabies. Only a short time ago a poor little girl died at the Pasteur Institute in this city of rabies due to the bite of a stray cur. Somebody is responsible for the running at large of this animal. If

those responsible do not take the necessary precautions to protect the public, then laws should be enacted which shall be sufficiently stringent to prevent a like occurrence. As a matter of fact, dogs have no right in the city at all. If some individuals cannot do without the companionship of the dog, the city should see to it that the public is sufficiently safeguarded. Even with this horrible example, it is no uncommon sight to see dogs daily running at large on the public streets without leash or muzzle. Moreover, the muzzles used are so notoriously inefficient that it is self-evident their use is merely to be within the letter of the law, rather than to comply with the spirit of the law.

Still another problem is the eradication of typhoid fever. Instead of being on the decrease, this affection seems to be holding its own. Modern methods as yet have made little inroads towards its suppression. Surely this is not because the State and City Health Boards have not in season and out of season preached the methods of conveyance and prevention of typhoid. Still it is a reflection on modern medicine that so little impression has been made on the control of this disease. Here again we physicians, then, have a duty to perform in the education of the public in preventing typhoid fever. Our concerted action in teaching the public that insanity is a disease, which should be treated in a properly equipped hospital for mental diseases, is another line in which we might be of more service to those who look to us for advice. Many cases of insanity might be cured if properly attended to, but if the families of those affected are as formerly to consider insanity in their family something to be concealed, little progress will be made in reducing this growing affection unless the error of their way of thinking be pointed out to them.

Consumption is pre-eminently a disease of the poor. It finds its victims in dirty, overcrowded, unsanitary surroundings. The proper housing of the poor would go a long way towards reducing its frequency. A self-respecting community should not permit human beings to be housed in such unhygienic quarters as some of our citizens call home. If sociologists hope to combat with this affection successfully there will have to be a complete change in the buildings of our poor. Instead of housing these unfortunates on blind alleys, the municipality or public-spirited citizens will have to provide living quarters where there is plenty of air and sunshine.

We are well aware that these statements are truisms, yet with all of our knowledge on the above-mentioned subjects there is an evident apathy on the part of public health guardians (the medical profession) to assume its proper place in the correction of these evils.

REPORT OF BOARD OF MEDICAL EXAMINERS OF MARYLAND.

QUESTIONS AT THE JUNE (1910) EXAMINATIONS.

ANATOMY.

1. Give a general classification of bones and name a bone in each class.
2. Name structures transmitted through any four of these six foramina: Foramen magnum, jugular foramen, sphenoidal fissure, foramen ovale, foramen rotundum, optic foramen.
3. What bones enter into formation of the nasal fossæ?
4. Name cavities of the heart and describe the valves.
5. Locate the imaginary lines dividing the abdominal cavity into regions. Name regions and state contents of lower central region.
6. Describe the lachrymal apparatus.
7. Through what arteries is the collateral circulation carried on after ligation of subclavian artery (lower third)?
8. Locate and describe Peyer's patches.
9. What nerves supply the tongue?
10. Give origin, insertion, action and nerve supply of the latissimus dorsi and biceps femoris muscles.

SURGERY.

1. What are the signs of intestinal perforation in typhoid fever and what is the surgical treatment?
2. Describe what is generally known as the radical operation for the cure of cancer of the breast.
3. Describe intubation of the larynx, laryngotomy and laryngotracheotomy. Give indications for each.
4. Give symptoms and treatment of acute catarrhal conjunctivitis.
5. Describe phimosis, paraphimosis, hypospadias, epispadias.
6. Describe two operations for cancer of the stomach.
7. Define the following operations: (a) Enterotomy, (b) enterostomy, (c) entero-anastomosis, (d) enterectomy.
8. Define and describe the following diseases of the hip: (a) Coxitis, (b) coxitis tuberculosa, (c) coxa vara.
9. Describe exstrophy of the bladder, cause, treatment—(a) palliative, (b) operative.
10. Describe mastoiditis, acute and chronic, causes and treatment of each.

PATHOLOGY.

1. State the method you would use in preparing a specimen of fresh kidney tissue for microscopical examination.
2. State the general principles of the methods used in isolating and identifying bacteria.
3. How would you prepare a specimen of sputum in order to demonstrate the presence or absence of tubercle bacilli?
4. Give the life history of the trichina spiralis and the pathology of a case of human trichinosis.
5. If you were given two specimens of serum and told that one was human and the other bovine, how would you proceed to differentiate them?

Or, what is anaphylaxis, and what alarming symptoms are sometimes due to this phenomenon?

(Answer either one of the above, but not both.)

6. What would you expect to be the macroscopic appearances of the abdominal viscera in a case of typhoid fever dying of hemorrhage in the third week of the disease?

7. State in the order in which they occur the changes which lead from the healthy lung tissue to a healed tuberculous cavity.

8. What changes, not local, may be noted during the course of, and what sequela may follow, an attack of diphtheria? What is the best way to prevent these changes, and why?

9. What is arteriosclerosis? What are the common causes leading to this condition? Mention its effect on the heart and kidneys.

10. What changes in the brain may lead to, occur in and follow a stroke of apoplexy the effect of which is paralysis of the right side?

OBSTETRICS.

1. Give general directions and preparation of the patient for labor and delivery.
2. What anesthetic should be used in labor and the indications for use of each?
3. What conditions demand the emptying of the uterus prior to quickening, and what is the technique of the procedure?
4. What indications require the use of forceps? Give the method of using them, and the dangers of their use to mother and child.
5. What is the mechanism of labor in a breech presentation?
6. Describe Credé's method of expressing the placenta.
7. What are the common causes of hemorrhage during and after labor?
8. Give indications for and method of amputation of the cervix uteri.
9. Give causes and treatment of pelvic peritonitis.
10. What are the dangers to be avoided in performing a dilatation of the cervix and curretting of the uterus?

PRACTICE.

1. Define (a) Enteroptosis, (b) Ludwig's angina, (c) purpura, (d) myxedema, (e) angina pectoris.
2. Define (a) Rabies, (b) ascaris lumbricoides, (c) empyema, (d) cholelithiasis, (e) dysphagia, and give some of the causes.
3. Give differential diagnosis between measles and scarlet fever.
4. Give differential diagnosis between serofibrinous pleurisy and pneumonia.
5. Give differential diagnosis between hysteria and epilepsy.
6. Give treatment of a case of typhoid fever and the most frequent complications.
7. Give treatment of early pulmonary tuberculosis, and state in detail what methods should be employed to prevent contagion from such a case.
8. Name types of chronic nephritis and symptoms of each type.
9. What diseases are likely to occur in the right inguinal region?
10. Give symptoms and treatment of gastric ulcer.

CHEMISTRY.

1. Define (a) chemistry, (b) chemical compound, (c) chemical affinity, and (d) chemical reagents.

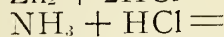
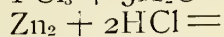
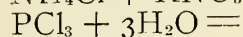
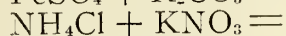
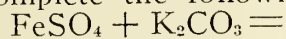
2. What does the presence of an abnormal quantity of chlorine in drinking water indicate, and give tests to determine its presence.

3. State the names and the general chemical and physical properties of the "halogens."

4. State of the two chlorides of mercury (a) their names, (b) chemical formulas, (c) composition, (d) solubility, (e) color and other properties.

5. What are normal and deci-normal solutions, and how are they made?

6. Complete the following equations:



7. (a) State the specific gravity of normal urine, (b) causes of deviations in the specific gravity of urine, and (c) what is the reaction of urine during the formation of phosphatic calculus?

8. Give a chemical test for each of the following: (a) Proteids, (b) phenol, (c) lactic acid, (d) amylum, (e) creosote.

9. State of silver nitrate its composition, properties and names by which it is known.

10. (a) Give tests and antidotes for nitric acid. (b) What are amalgams? (c) What are "indicators?" (d) Give a brief outline of the differences between "leucomaines" and "ptomaines." (e) What kinds of blood are distinguished and give the differences between them?

MATERIA MEDICA.

1. What are alkaloids? What is an infusion? What is a decoction? Define fixed and volatile or essential oils.

2. Give two remedies of the following classes and the doses of each: Galactagogues, sialagogues, emetics, antiseptics, anthelmintics, diuretics, antipyretics.

3. Give six official preparations of iron used internally, and give dose of each.

4. Cinchona—mention the most important preparations and their doses.

5. Arsenic—mention the official preparations and average dose of each. Give the official antidote for arsenical poisoning and how prepared.

6. Name five official acids used internally, and give dose of each.

7. Name three preparations obtained from the animal kingdom, and give source of each.

8. Give six official preparations of mercury used internally and dose of each.

9. Name five official powders, composition and dose of each.

10. Write me a prescription, using official terms, containing compound tincture of gentian, tincture of nux vomica and bicarbonate of soda. Write one containing reduced iron, arsenious acid, sulphate of strychnine and sulphate of quinine. One containing digitalis, nitrate of potassium and extract of buchu. One containing pepsin, subnitrate of bismuth and paregoric.

THERAPEUTICS.

1. Name five antispasmodics and the general indications for their use.

2. Write two prescriptions in Latin, each containing four ingredients, one in dry, the

other in liquid form, with directions for administration, and state the conditions for which they are to be used.

3. What is an antitoxic serum? Name disease most amenable to serum therapy. Give source of serum and describe method of administration.

4. What are the therapeutic uses of opium? Strychnia? Describe symptoms of poisoning by each.

5. Give the indications for venesection and describe the operation.

6. Give the physiological action and therapeutic uses of colchicum.

7. Give the physiological action, therapeutic use and effect of overdose and constant use of digitalis.

8. Describe purpose and method of introduction of vaccine lymph into human system and physiological manifestations.

9. Give mode of action of cardiac sedatives, cardiac stimulants, cardiac tonics. Name three of each.

10. What is meant by the terms "antagonists," "antidotes?" Describe uses and modes of action.

PHYSIOLOGY.

1. (a) What is meant by muscular contraction? (b) What effect has the temperature or veratrin upon muscular contraction? (c) What is the difference between simple and compound or tetanic contraction, and what are the chemical changes in the muscle during contraction and rigor?

2. (a) State briefly the general physiology of the nerve cell and what is meant by the neuron doctrine.

3. What is meant by the knee-jerk? (b) What use are the knee-jerk and spinal reflexes as diagnostic signs?

4. What changes take place during sleep, and what are the neuron and anemia theories of sleep?

5. Give the composition of the blood, its reaction, specific gravity, temperature, difference between arterial and venous, the amount in the body and the time required for a complete circulation.

6. (a) What is meant by blood pressure and how determined? (b) What effect has menstruation upon blood pressure? (c) What effect has the blood pressure in the arteries upon the pulse rate?

7. (a) Give the difference in each ingredient between inspired and expired air. (b) The effect of work upon the respiratory movement. (c) The cause of the first respiratory movement.

8. (a) Give composition and specific gravity of the saliva and the gastric juice, and the composition and physiological action of the pancreatic secretion. (b) Which is the only secretion in the body containing a free acid, and what is the acid?

9. State the general physiological importance of bile, and what would be the effect of complete occlusion of the bile duct?

10. (a) Name the nerves of submaxillary gland, and state in full the effect of stimulating each. (b) What is meant by the paralytic "secretion?"

Summary of Results of Examination Held by the Board of Medical Examiners of Maryland, June 21, 22, 23 and 24, 1910.

No.		Anatomy	Surgery	Pathology	Obstetrics	Practice	Chemistry	Materia Medica	Therapeutics	Physiology	Total	Average
	COLLEGE OF GRADUATION.											
1	University of South, '08.	75	..	..	..	..	..	..	..	..	..	..
2	University of Maryland, '10.	83	78	75	50	62	86	77	55	78	644	72
3	Maryland Medical College, '08.	76	..	..	..	..	..	..	..	..	..	..
4	Howard University, '08.	75	80	47	93	66	..	..	..	..	..	..
5	University of Maryland, '10.	87	90	86	93	80	80	84	67	80	747	83
6	University of Maryland, '10.	81	90	70	77	77	76	70	60	75	676	75
7	Baltimore Medical College, '09.	80	..	..	..	..	75	..	..	..	..	..
8	University of Maryland, '10.	87	85	84	79	78	93	90	79	86	761	85
9	Baltimore Medical, '10.	75	70	70	85	65	75	50	61	63	614	68
10	Baltimore Medical, '10.	83	90	99	88	77	78	89	68	82	754	84
11	University of Maryland, '03.	69	..	32	..	64	60	..	35	75	..	..
12	University of Maryland, '10.	90	90	83	90	81	80	84	84	75	757	84
13	University of Maryland, '10.	91	84	78	87	78	60	88	71	81	718	80
14	University of Maryland, '10.	86	95	80	80	75	95	92	84	91	778	86
15	Baltimore Medical College, '09.	75	..	75	..	..	75	..	..	..	..	..
16	Baltimore Medical, '06.	53	..	56	81	..	..	..	69	..	..	..
17	Baltimore Medical College, '10.	75	78	75	78	75	71	75	73	75	675	75
18	University College of Maryland, '08.	44	..	54	..	53	70	..	..	..	..	..
19	University of Maryland, '10.	87	98	84	93	82	83	75	93	89	784	87
20	University of Maryland, '10.	85	85	75	84	75	75	50	66	80	675	75
21	University of Maryland, '10.	86	90	84	81	83	86	91	71	70	742	82
22	University of Maryland, '10.	97	94	85	80	87	90	92	80	94	799	89
23	University of Maryland, '10.	90	80	97	94	83	78	82	75	70	749	83
24	Baltimore Medical, '10.	73	78	52	78	81	75	89	75	85	686	76
25	Baltimore Medical, '10.	77	90	94	91	75	75	86	84	75	747	83
26	University of Maryland, '10.	75	90	76	83	75	75	64	67	70	675	75
27	Maryland Medical, '09.	75	70	48	..	67	..	..	..	..	..	..
28	Baltimore Medical, '10.	49	70	69	84	57	64	52	82	60	587	65
29	Baltimore Medical College, '10.	97	80	88	75	80	85	97	89	75	766	85
30	Maryland Medical, '10.	75	85	84	48	88	64	87	83	95	709	79
31	Johns Hopkins, '10.	66	98	92	85	91	82	81	80	82	757	84
32	Maryland Medical, '10.	90	94	82	84	95	79	94	96	96	810	90
33	University of Pennsylvania, '10.	75	96	87	93	76	75	59	76	75	712	79
34	Baltimore Medical, '10.	60	80	71	94	75	56	55	48	60	599	67
35	University of Maryland, '09.	37	..	63	..	68	..	..	..	75	..	..
36	Jefferson Medical College, '10.	84	88	76	97	75	75	81	70	75	721	80
37	University of Maryland.	69	..	..	..	..	75	78	..	80	..	..
38	Baltimore Medical, '10.	75	78	75	58	65	72	66	66	75	630	70
39	University of Maryland, '10.	75	90	85	80	79	67	77	71	90	714	79
40	University of Maryland, '10.	91	96	89	83	92	92	89	71	95	798	89
41	University of Maryland, '10.	88	90	81	98	75	79	90	78	90	769	85
42	Baltimore Medical, '10.	88	94	91	95	87	92	75	93	90	805	85
43	College of Physicians and Surgeons.	85	..	..	..	..	75	82	..	90	..	..
44	Johns Hopkins, '10.	77	85	99	93	82	80	75	87	87	765	85
45	College of Physicians and Surgeons, '10.	93	100	77	95	81	75	93	89	92	795	88
46	College of Physicians and Surgeons, '10.	75	84	91	89	81	77	94	75	80	746	83
47	University of Pennsylvania, '10.	90	96	93	87	77	88	78	89	85	783	87
48	Baltimore Medical College, '10.	79	92	87	90	75	82	87	74	75	741	82
49	Baltimore Medical College, '04.	49	60	56	95	59	60	77	78	65	599	67
50	Johns Hopkins, '10.	80	94	92	91	81	75	78	76	75	742	82
51	Johns Hopkins, '10.	78	90	85	92	75	78	63	81	80	722	80
52	University of Maryland, '10.	91	92	71	90	75	83	84	75	79	740	82
53	University of Maryland, '10.	83	75	73	79	80	78	83	96	75	722	80
54	University of Maryland, '10.	84	95	86	93	76	82	81	81	75	753	84
55	University of Maryland, '10.	85	96	68	93	77	75	75	77	90	736	83
56	College of Physicians and Surgeons, '10.	84	80	88	70	75	82	89	75	92	735	82
57	University of Maryland, '10.	82	85	67	90	64	60	65	67	75	655	73
58	Baltimore Medical College, '10.	82	78	78	75	80	72	75	76	60	676	75
59	University of Maryland, '10.	41	88	68	83	66	72	53	75	50	596	66
60	University of Maryland.	83	..	..	..	..	85	86	..	85	..	..
61	College of Physicians and Surgeons.	84	..	..	..	..	75	83	..	87	..	..
62	University of Maryland.	94	..	..	..	..	79	75	..	85	..	..
63	Baltimore Medical College, '10.	96	90	91	95	80	83	90	77	90	792	88
64	Baltimore Medical College, '10.	70	95	75	93	84	75	91	88	85	756	84
65	Jefferson Medical College, '10.	82	90	75	85	75	60	75	53	80	675	75
66	University of Pennsylvania, '10.	77	80	60	91	78	72	69	87	85	699	78
67	George Washington University, '07.	75	..	..	..	..	75	..	..	..	..	..
68	Maryland Medical College, '10.	56	60	32	52	55	48	50	59	65	477	53
69	University of Maryland, '10.	89	95	87	75	77	90	84	88	91	776	86
70	University of Maryland, '10.	66	80	89	83	64	80	65	46	75	648	72
71	College of Physicians and Surgeons, '10.	81	90	90	92	75	78	90	80	92	768	85
72	University of Pennsylvania, '10.	90	98	79	84	91	78	60	96	75	751	83
73	University of Pennsylvania, '10.	87	90	83	90	77	75	82	79	70	733	81
74	Johns Hopkins, '10.	71	84	83	97	81	75	65	65	80	701	78
75	College of Physicians and Surgeons, '10.	92	86	76	92	83	88	93	91	75	776	86
76	Howard University, '10.											
77	Howard University, '10.											

Failed to appear.
Failed to appear.

Summary of Results of Examination Held by the Board of Medical Examiners of Maryland,
June 21, 22, 23 and 24, 1910.—(Continued.)

No.	COLLEGE OF GRADUATION.	Anatomy.....	Surgery.....	Pathology.....	Obstetrics.....	Practice.....	Chemistry.....	Materia Medica.	Therapeutics....	Physiology.....	Total.....	Average.....
78	University of Maryland, '10.....	75	95	81	89	91	83	60	79	68	721	80
79	Johns Hopkins, '10.....	76	100	95	96	91	87	77	94	80	796	88
80	Baltimore Medical, '10.....	88	88	97	95	90	75	83	80	75	771	86
81	Johns Hopkins, '10.....	92	90	95	92	81	85	75	87	75	772	86
82	Baltimore Medical College, '10.....	83	85	86	95	80	75	75	89	60	728	81
83	Johns Hopkins, '10.....	89	90	98	95	81	75	65	90	75	758	84
84	Johns Hopkins, '10.....					Failed to appear.						
85	Baltimore Medical College, '10.....	92	88	85	90	87	84	88	84	88	786	87
86	Baltimore Medical College, '10.....	92	90	83	87	82	77	88	72	70	741	82
87	University of Maryland.....	73	..	..	..	..	72	69	..	68	...	..
88	University of Maryland.....	94	..	..	..	..	90	88	..	88	...	..
89	Johns Hopkins, '10.....	80	90	95	92	82	80	69	95	87	770	86
90	Maryland Medical College, '10.....	83	85	75	78	75	46	89	73	75	679	75
91	Johns Hopkins, '10.....	83	92	92	95	85	79	69	75	82	752	84
92	University of Maryland.....	84	..	..	..	..	80	76	..	75	...	..
93	Johns Hopkins, '10.....	75	90	90	95	75	84	67	87	87	750	83
94	Jefferson Medical College, '10.....	94	90	98	92	89	79	87	98	90	817	91
95	College of Physicians and Surgeons, '10.....	93	85	70	81	70	77	75	73	70	694	77
96	Baltimore Medical, '10.....	70	78	68	91	75	75	87	86	75	705	78
97	College of Physicians and Surgeons, '10.....	93	90	83	93	75	75	89	86	75	759	84
98	University of Maryland, '10.....	93	90	90	91	94	83	75	91	93	800	89
99	University of Maryland, '10.....	93	90	60	91	75	74	86	89	75	733	81
100	Johns Hopkins, '10.....	87	80	88	93	90	75	65	84	75	737	82
101	University of Maryland.....	63	..	..	..	..	75	75	..	75	...	..
102	University of Maryland.....	92	..	..	..	..	75	87	..	75	...	..
103	Johns Hopkins, '10.....	90	95	96	95	84	86	83	96	75	800	89
104	University of Maryland.....	89	..	..	..	..	79	93	..	87	...	..
105	College of Physicians and Surgeons, '10.....	87	90	94	87	80	75	91	89	92	781	87
106	Woman's Medical College, Balto., '10.....	76	80	82	85	79	75	63	90	80	713	79
107	University of Maryland, '10.....	75	95	80	78	75	70	69	76	68	686	76
108	University of Maryland, '09.....	86	95	75	86	75	72	58	53	75	675	75
109	University of Maryland.....	80	..	..	..	..	75	67	..	68	...	..
110	Johns Hopkins, '10.....	91	98	84	91	80	78	75	86	85	768	85
111	Johns Hopkins, '10.....	77	95	96	95	75	72	68	73	82	733	81
112	Johns Hopkins.....	80	..	..	..	..	77	75	..	95	...	..
113	College of Physicians and Surgeons, '09.....	71	95	75	93	83	77	75	81	75	725	81
114	George Washington University, '09.....	77	100	69	68	75	78	83	85	75	710	79
115	University of Maryland, '10.....	87	92	68	86	75	75	65	76	75	699	78
116	Howard Medical School, '10.....	75	98	88	93	75	82	60	86	82	739	82
117	Baltimore Medical College, '09.....	43	..	58	..	..	54	75	..	..	...	..
118	College of Physicians and Surgeons, '07.....	82	85	90	75	80	78	83	90	70	733	82
119	Baltimore Medical College, '10.....	88	90	83	76	81	85	77	84	68	732	81
120	Baltimore Medical College, '10.....	70	85	80	93	69	75	79	94	82	727	81
121	Baltimore Medical College.....	88	..	..	..	..	86	77	..	85	...	..
122	Baltimore Medical College, '01.....	26	40	35	78	43	58	46	60	50	436	48
123	University of Maryland, '10.....	67	90	71	75	68	70	63	60	75	639	71
124	Baltimore Medical College, '10.....	71	90	83	94	77	72	77	83	75	722	80
125	University of Maryland.....	76	..	..	..	..	75	80	..	80	...	..
126	Queen's University, Kingston, '08.....	80	98	80	94	83	75	88	88	90	776	86
127	University of Pennsylvania, '10.....	82	98	98	95	75	85	75	90	75	773	86
128	University of Maryland, '10.....	78	90	75	75	67	65	75	60	75	660	73
129	University of Pennsylvania, '10.....	80	85	67	57	75	80	77	79	75	675	75
130	University of Maryland, '10.....	53	75	53	84	66	75	25	..	60	491	54
131	College of Physicians and Surgs., Ill. Univ.	69	95	75	91	75	71	75	82	50	683	76
132	University of Pennsylvania, '10.....	69	85	90	79	71	80	60	72	70	676	75
133	University of Maryland, '09.....					Failed to appear.						
134						Failed to appear.						
135	University of Maryland, '09.....	57	75	75	82	64	55	63	56	68	595	66
136	University of Pennsylvania.....	65	..	..	..	..	66	60	..	75	...	..
137	University of Pennsylvania.....	92	..	..	..	..	85	84	..	80	...	..
138	University of Dublin, '77.....	78	98	79	91	76	67	60	91	75	715	79
139	Louisville and Hospital Medical College, '08.	54	90	47	79	68	57	54	..	..	...	..
140	University of Pennsylvania, '10.....	82	95	79	90	84	75	78	92	75	750	83
141	University of Maryland.....	86	..	..	..	..	65	68	..	70	...	..

In the above summary an average of 75 is required of those participating in the examination for the first time in order to secure a license. Those who have failed are eligible to re-examination at the expiration of six months. They are then obliged to receive a rating of 75 in each branch in which they are re-examined before license can be issued. Under the Maryland law, students who, at the end of their second year, have successfully passed their college examination in Anatomy, Chemistry, Materia Medica and Physiology, are entitled to examination by the Board of Medical Examiners in these branches. Ratings made by these students in the examination, which is known as the "second-year examination," are carried forward and made a part of the final examination, when an average of 75 must be obtained to secure a license. We trust that this statement will make clear the apparently incomplete examination of certain participants.

Medical Items.

AMONG the many Baltimore physicians who are spending the month of August out of town are Drs. John Mackenzie, at Narragansett Pier; Frank J. Kirby, in Chicago; O. Edward Janney, at Ocean City; Leonard K. Hirshberg, traveling in Canada and the Lake region; Alexander D. McConachie, in Canada and Maine; Christopher Deetjen, abroad; Frank Sanger, at Nantucket; W. Frank Lucas, at Atlantic City; William B. McDonald, at Solomon's Island; Charles R. Shoemaker, at Atlantic City and Bloomsburg, Pa.; Henry M. Hurd, in Maine; A. H. A. Mayer, in Asbury Park; Albert H. Carroll, in Nova Scotia, Newfoundland and Greenland; Frank Martin, in the White Mountains, N. H.; H. E. Peterman, at Cherrytree, Pa.; J. K. B. E. Seegar, at Relay, Md.; John N. Mackenzie, at Narragansett Pier; J. Albert Chatard, at Lake Station, Md.; J. Fred Adams, at Catonsville, Md.; Arthur J. Traveira, in France and Portugal; Charles E. Sadtler, in Germany; Daniel Z. Dunott, at Deer Park, Md.; G. Marshall Smith, at Blue Ridge Summit; F. B. Adams, in Harford county; Walton Bolgiano, at East Gloucester, Mass.; Richard H. Follis, at Bass Rocks, Maine; Anthony L. Rettaliata, at Atlantic City; R. Tunstall Taylor, at Narragansett Pier; George I. Young, at Atlantic City; Alfred Whitehead, in the Berkshire Hills, Mass.; Charles Teackle Buckner, in North Hatley, Canada, and Bar Harbor, Maine; John King, at Narragansett Pier; Howard A. Kelly and Cecil W. Vest, in England; Donna Waldron, in Scotland; J. M. T. Finney, at Little Fish Island, Canada; John T. Avery, at Ocean View, Va.; Thomas Shearer, in Ontario, Canada, and Charles Simon, in Nova Scotia.

DR. WILLIAM G. RIDOUT of Annapolis, who has been confined to his residence on Gloucester street for several weeks, is able to be about again.

DR. VICTOR F. CULLEN, superintendent of the Maryland Tuberculosis Sanatorium, is making a trip through the Northwest, studying the sanatoria of that region.

DR. GEORGE L. BROADRUP of Cumberland was badly hurt in an automobile accident recently. He is now a patient at the Allegany Hospital.

DR. G. MILTON LINTHICUM is a patient at the Maryland General Hospital, suffering with typhoid fever.

DR. F. E. STEELE, a member of the class of 1907 of the Baltimore Medical College, is visiting in Baltimore and will take a post-graduate course here.

DR. JAMES K. CULLEN has been visiting in Waynesboro, Pa.

THE engagement of Miss Mary Emma Wright of Calvary, Md., and Dr. Granville Hampton Richards, University of Maryland, 1908, of Port Deposit, Md., is announced. The wedding will take place in November.

THE eighth annual reunion of the Cumberland Valley Medical Association was held at the Blue Mountain House, Pen-Mar, on September 1.

INVITATIONS are out for the marriage of Dr. Jacob Wheeler Bird, University of Maryland, '07, of Sandy Spring, Md., and Miss Mary McIntire Wilson of Centreville, Md. The ceremony will be performed at Centreville September 7, 1910.

DR. JOHN R. WINSLOW, who has been visiting in Berlin, is now in Holland, and will shortly sail for home.

DRS. ARTHUR P. HERRING and Jesse C. Coggins are at the Marlborough-Blenheim, Atlantic City.

MARRIAGES.

JOHN BUSHROD SCHWATKA, M.D., University of Maryland, '82, to Miss Nina M. Duvall, both of Baltimore, July 29, 1910.

DEATHS.

CHARLES B. WEST, Jefferson Medical College, '83, at his home in Upper Strasburg, Pa., July 18, 1910, of heart disease, aged 52 years.

FRANK DENTON GAVIN, University of Maryland, '74, at his home in Baltimore, August 24, 1910, of throat trouble, aged 56 years.

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PHILLIPS' WHEAT PHOSPHATES
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PHILLIPS' PHOSPHO-MURIATE OF QUININE
PHILLIPS' SYRUP OF WHEAT PHOSPHATES
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Nazeptic Wool In HAY FEVER

Often Prophylactic
Usually Curative
Always Palliative

A continuous antiseptic vapor bath to
the affected mucosa.
Medication with each inhalation.



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your sample?*

SHARP & DOHME—Baltimore

Editorial Comment.

STRAW ITCH.

The Cleveland Medical Journal.

THIS itching eruptive disease which was first described by Schamberg in 1901 has, within the past year, been shown by Goldberg (*Public Health Reports*, Vol. XXIV, No. 28; Vol. XXV, No. 23) to be due to an almost microscopic mite which normally preys upon various larvæ and insects infecting grain and straw. This mite, *Pediculoides ventricosus*, is akin to the red bug or chigger and to the common itch mite of scabies: like them it attacks both men and animals, producing a more or less marked, itching eruption, sometimes attended with considerable constitutional disturbance. Within a few hours of exposure to the parasite, severe itching occurs and a cutaneous eruption appears which first taking the form of wheals progresses through vesicular and pustular stages, so that in the more severe cases the clinical picture may closely resemble a mild form of variola or, in other instances, varicella. The opportunity for the parasites attacking man may be presented not only upon the farm when the grain is being harvested in the field or later thrashed, but inasmuch as the mites may live in the straw for a considerable time, they may attack people who have nothing to do with farming, but live, perhaps, in cities, and who have been brought into contact with the infected straw. In fact, many of the cases have been noted in towns, the patients having slept on mattresses filled with straw infected with these mites. The condition is fortunately readily amenable to treatment when the exact nature of the affection has been recognized, and if further attacks by the parasites can be obviated. If the mites are present in mattresses they can easily be killed by fumigation, heat, etc., or the straw can be burned. In the harvest fields the proposition is an entirely different one, and the mites may be so numerous that harvesting may even prove an impossibility. The treatment of the eruption itself requires merely soothing applications. Since the parasites do not burrow into the epidermis, they are readily dislodged by ordinary bathing, but if persistent, an application of a mild antiseptic or of sulphur ointment will prove effective. Infected clothes, of course, must be disinfected as in the case of scabies. The parasites are apparently widespread and their distribution appears to be increasing. A number of cases of infection by them have been noted in Ohio, and during the summer season it is quite possible that some of the itching affections ascribed to poison ivy, urticaria, etc., may in reality prove on closer investigation to be due to this cause.

MORE ABOUT CANCER.

Medical Record.

THE report of the British Cancer Research Fund has been issued recently. Dr. Bashford and his coadjutors give a conservative and cautious account of the results obtained from their researches and investigations into the cause of the disease. No striking progress, they say, has been made in solving the mystery

Open Letter No. 2

Baltimore, Md., U. S. A.

Dear Doctor:

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of the origin of cancer, nor does the report lead us to hope that the end is yet in view. With the origin of the disease not known, it would be rash to predicate a successful mode of treatment. This appears to be the opinion of a large proportion of the medical profession, in fact, the majority of surgeons have little hesitation in stating their views that at present the only reliable means of treating cancer is by the knife. Dr. Gilbert Barling at the meeting of the British Medical Association, the special report of which appears elsewhere in this issue, voiced the opinion of most surgeons when he said that operative measures were, as yet, the sole effective methods of relieving and curing the most deadly forms of cancer. Of course, it is well known that the knife is frequently futile in such cases, but it is said to afford the one reasonable chance of saving life. Early diagnosis and prompt operation, therefore, offer the best opportunities of cure. Much has been claimed for radium in the treatment of cancer, and Dr. Louis Wickham of Paris, who also read a paper on the subject at this meeting of the association, is, with Abbe of this city, one of the best known exponents of this form of treatment. However, the form of cancer thus successfully treated by radium is generally localized, superficial, non-inflammatory, and of comparatively small size. It is true that claims have been made by several well-known specialists that deep-seated malignant tumors have been cured by the agency of radium, but experience has been too limited for even the most enthusiastic to assert that radium is a cure for such growths. There is no doubt that the rays emanating from radium exercise a selective action on certain diseased tissues, and in many cases cause their destruction. Therefore the rôle of radium would seem to be its employment in cases of superficial cancer of the kind noted above. Dr. Wickham has warned medical men that in all other cases than those of cancer of the skin it is their duty before applying radium to decide if other agents will not give better results. This is probably sound advice, in spite of the many wonderful cures by radium which Abbe has reported from time to time during the past four years. It must be borne in mind, however, that frequently radium may be a valuable auxiliary of the knife. Indeed, in the opinion of the best authorities, the parts played in the treatment of cancer by operative means and radium are different, but they may be, on occasions, employed together with good effect.

ALLOPATHY, A MISNOMER.

American Medicine.

ALLOPATHY is a misnomer, for today there is no such school, nor are there any physicians who care to be dubbed "allopaths." Long ago it was recognized that it was contrary to the spirit of medical science to claim adherence to any particular "school" of medicine or to follow any restricted line of medical practice. The broad, liberal practitioner of medicine realized that his practical usefulness depended on his freedom to use any and all means at his command in combating disease, no matter what their source or derivation. True science knows no limitations, and the instant

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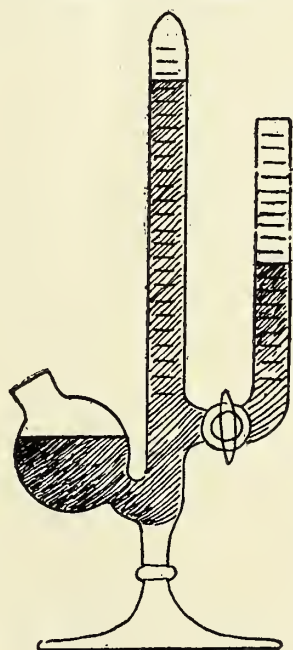
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that medical practice is denied absolute freedom it becomes unethical and irregular. Hence, the physician who admitted no restriction of his methods of treating disease, but claimed the absolute right of using anything or everything that would accomplish desired results in the best possible way, saw that his attitude was the only right or ethical one, and henceforth he called himself and his colleagues of like belief and practice regular.

Few liberal-minded people will deny the correctness of this classification of medical practitioners into regular and irregular. The regular physician uses everything that serves his purpose and enables him to accomplish definite results. In other words, he is more interested in the ends than in the means. The irregular practitioner follows one line of practice to which he limits his methods—or at least professes to. He denies good in any other method than his own—ostensibly. But the feature to be deprecated principally in sectarian medicine is that today it is seldom honest. Take homeopathy for instance. When practiced faithfully, no matter how much one may disagree with its teachings, it deserves respect because it embodies certain definite principles which can be honestly followed. But as a matter of fact, it is the exception to find a self-styled homeopathic practitioner who limits his methods to the doctrines of Hahnemann. All but a very few use as extensive an armamentarium as the physician who makes no sectarian claims. To claim, therefore, to be a homeopath under such conditions is hardly honest, to say the least. The electric schools have never laid as much stress on sectarianism as the homeopaths, and they have adhered much more closely to their teachings. Consequently they are far less open to the criticism of hypocrisy than the great majority of the homeopaths.

Sectarianism in medicine is passing away. It must be highly objectionable to the honorable homeopathic physicians of America when they realize their anomalous position. They know, and a great many intelligent laymen know, that homeopathy *per se* constitutes a small part of their practice. Therefore, why should they perpetuate sectarianism? It entails no sacrifice of principle or privilege to renounce sectarianism and join the ranks of the regular profession—the school, if one chooses to call it such, whose two main requirements are (first) a broad, well-grounded equipment in the fundamentals of medical education, anatomy, physiology, chemistry, pathology and allied subjects—and (second) the broadest possible knowledge of every means effective in preventing, controlling and overcoming disease. What a physician uses or how in any or all his cases is entirely a matter of individual judgment and decision.

Medical science has made wonderful strides in the past decade, and there are apparently no limits to the possibilities of controlling the diseases that afflict mankind. The humanitarian character of medical practice creates a common brotherhood between those who devote their life to medicine that is enjoyed by almost no other calling. It would seem that this brotherhood should bring all practitioners of medicine closer together and lead us as earnest workers in an honorable, noble cause to pool our efforts for the common good. The differences between educated physicians, no

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matter what their "school," is too small to warrant the continuance of the sectarian idea. The future work of medical men in ridding humanity of preventable diseases calls for a united profession. All that is needed for the practical achievement of a professional unity that will bring all that every earnest physician hopes for is the obliteration for all time of medical sectarianism. The homeopathic and eclectic physicians of America number too many clean, capable men to make it conceivable that they will long continue the almost obsolete claims of "school" or "pathy," which actually means so little, but which interfere so definitely with medical solidarity and progress.

THE INSANITY EXCUSE.

American Medicine.

THE passing of the insanity excuse for crime may now be confidently predicted. Our former complacency in turning loose murderers on any manufactured mental diagnosis has had the inevitable result—a carnival of homicide which has amazed the civilized nations of Europe. It has come to such a pass that men with murder in their hearts apparently expect to be excused should they give way to their passions, and the absence of the deterrents so effective in Northern Europe has created a license which is jeopardizing everyone's life. The dismay among thinking men has now reached the point of a clamor for the confinement of every murderer, be he sane or insane. If he is responsible, then the confinement is in a penal institution for the purpose of reforming him, but if irresponsible he must be sent to a hospital to be cured. In each case the primary consideration is the protection of society from a repetition of the crime by that particular man. Experience shows that confinement for a single crime of passion is an almost perfect preventive, as it is the rarest thing for the released criminal to commit another. His one offense has sobered him, and the punishment is always remembered when passion again arises, if it ever does. In the case of the insane, subrational or irrational, there is a different condition to deal with, as the defective nature of the brain may nullify the ordinary deterrents so effective with the normal. It is therefore necessary to confine these cases longer, or even for life, if the mental state is such that the irritations of daily life in society are liable to cause a relapse into irresponsibility.

Responsibility of criminals is therefore taking on a new meaning in response to the public opinion which demands greater safety of life. After the facts are established and the jury has rendered a verdict that the accused did commit the offense, then is the time for the "experts" to examine the convict to determine whether he shall go to prison or asylum, providing, of course, it was not a justifiable act such as self-defense. The new viewpoint is that every violation of law is necessarily to be followed by the removal of the offender for the protection of society. Proof of irresponsibility no longer excuses; it merely determines the method of treatment. Dr. James J. Walsh, professor of nervous diseases at Fordham University, has even gone a step farther (*American Journal*

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of the Medical Science), and suggests a reversal of the purposes of punishment. The normal man who slips once under extraordinary passion or temptation is really in the least need of punishment, as his remorse is proved sufficient. It is the subrational who need the greatest mental impression, and these, even if feeble-minded, can be taught self-restraint by proper confinement, though, of course, the existence of insanity will be a bar to release in every case. This is revolutionary, but society demands a revolution of some kind and every suggestion must receive consideration. It seems, therefore, that we are drifting to the old theory that the sole purpose of punishment is its deterrent effect upon others. Fear of consequences is the mainspring of good conduct after all is said about our desires to do right. If everyone knows he is sure to lose liberty or life if he takes life wantonly, our present epidemic of murders will cease. Nevertheless, the individual has rights even if he is a convict, and his restoration to a useful member of society is a public duty. Punishment is still a cure as well as a deterrent.

HEPATIC SCLEROSIS IN NON-ALCOHOLICS.

American Medicine.

THE frequency of hepatic sclerosis in non-alcoholics has again been brought up by Benedict of Buffalo (*New York Medical Record*, December 25, 1909), who finds that in about one-fourth the cases little or no alcohol had been taken, in over half only moderate amounts, but that in only 16 per cent. was it possible to elicit a history of excess, and even in these he believes the result not due to the alcohol itself as much as to the poisons formed and absorbed in the dyspeptic conditions due to the alcohol. Moreover, in all the non-alcoholic cases he found distinct histories of recurrent attacks of dyspepsia due to any of the numerous causative faults of hygiene or to strains and worry. So he is inclined to believe that every case is due to autointoxication from intestinal fermentation and putrefaction. He could not detect any relation to the excessive use of meat or sugar, but the latter is a very likely cause. Heredity was ruled out because so few cases appeared in two generations, and those were alcoholics. Nevertheless, the tendency to any sclerosis is now such a well-recognized sign of faulty physique, it is a pity the cases are not investigated with a view of determining if relatives are not "weaklings" in the sense of being more or less liable to other serious conditions or are not snuffed out by the infections. Indeed, there is much evidence which links together all the scleroses in one big group of defectives, for why, indeed, should so few dyspeptics have this liver condition if they are not built of weak materials? Similarly it is said that arteriosclerosis does not affect the well-bred to nearly the same extent as the badly bred—that is, from similar causes. The family histories are important now that alcohol has been acquitted in both these conditions. And, by the way, it would not be a bad plan to go over other diseases now blamed on alcohol, for it has been given discredit where it is probably innocent. If all our carbohydrate food is changed into alcohol prior to final assimilation, as some physiologists say, it cannot be such a devil as it has been painted.



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THE GENERAL PRACTITIONER THEN AND NOW.*

By Franklin Buchanan Smith, M.D.

THIRTY years ago an eminent Scotch-Irish Presbyterian divine, noted for his ability as a theologian, metaphysician and psychologist, observing the inroads the various sciences were making into the literal interpretation of the Bible and the difficulty of harmonizing science and religion, wrote an article entitled "Whither, Oh, Whither?" In some such frame of mind, noting the peculiar relations existing now between the general practitioner and the laity and the growth of specialism, I have thought I would ask the all-round and well-rounded man of medicine whose services are first demanded by the public to stop and consider whither the trend of modern development tends.

One hundred years and over have elapsed since the practitioner of medicine in Maryland awoke to the realization that something was lacking from the attainment of his highest hopes and ideals in the pursuit of his profession. Sparsely settled was the country and widely distributed were the medical men of that period, the only means of locomotion being the horse—the stage coach. It is not surprising that the individual, though mindful of his isolation, was slow in overcoming it by organization. But the time arrived when, partly impelled by that instinctive desire of right-thinking men for association with kindred spirits, partly from the desire of general mental improvement and social enjoyment, and again for the selfish purpose of protection in common against foes of the profession with which the country was infested, namely, quacks, means of communication with each other were sought, exchange of views held, agreements entered into, societies formed, and, finally, legislation sought and secured through regularly chartered institutions for the elimination of the competition of the unworthy in the medical profession and the protection of the general public from charlatanism and quackery.

The medical men of the eighteenth and of the first half of the nineteenth century were divided into two classes as to education. On the one hand were men like Wiesenthal of Baltimore, Scott of Annapolis, Archer of Harford county, Tyler, Thomas, Annan and

*President's address delivered before the semi-annual meeting of the Medical and Chirurgical Faculty of Maryland at Annapolis, September 13, 1910.

McGill of Frederick county and others, thoroughly abreast of the times, with an education liberal and diversified as a foundation for their university superstructure in medicine. They, of course, lived in the larger towns, were widely known, were eagerly sought after because of the fame of their knowledge and the skill of their treatment. Their labors were chiefly restricted to the practice of surgery, ophthalmology and midwifery in their respective neighborhoods, or in educating by a system of apprenticeship others in the study of medicine, or in advising in consultation those more isolated from the centers of population. As a class they were prosperous, and, for the time in which they lived, well-to-do.

The second class were, however, the active workers in the profession, and were composed of the large mass of general practitioners who had secured their education under difficulties at the few local schools and academies, and had accumulated their knowledge of the healing art in the offices and under the personal supervision of one or more of the former class, together with such experience as time and opportunity afforded.

The right to practice legitimately medicine and surgery at this time was dependent chiefly upon the countenance and support of their more highly educated preceptors, and later by the acquisition of sufficient knowledge to pass successfully the lenient examination of the boards appointed by this Faculty. We of this day are disposed to look back with envy to these good old times, upon the autocracy of the medical man, and the veneration and respect in which he was held by his fellow-citizens; not the equal, but the leader of his community in everything pertaining to the community's welfare. His dictum as family physician was not only the voice of the friend in need, but in questions of authority—the mandate of a czar.

To bleed, to blister, to purge and sweat embraced their treatment of each and every disease. The whole domain of medicine was embraced in the mastery, according to the best light obtainable, of the six branches—anatomy, physiology, surgery, practice, obstetrics and chemistry.

Dispenser of his medicine, general specialist in every branch of surgery and practice—monopolist, censor, autocrat; hedged in by a code of ethics which protected him as the absolute owner and presider over the destinies of his clientele against the invasion of any of his regular colleagues.

How enviable seemed the lot of our progenitor!

Few were the requirements either of knowledge or accoutrement it appears to us of this day. We little count the difficulty of attainment of that knowledge, meager as it was, and deride an armamentarium so crude, yet almost impossible of acquisition.

Yet in those days our fathers had troubles of their own. Midwives, "grannies," quacks, and, worst of all, that ever-present scourge of the profession, the self-lauding, advertising, rate-cutting brother practitioner of greater or less merit abounded. The humiliation our fathers felt over the loss, and sometimes cure, of

their clientele by the unskilled or irregular is only comparable to the anguish of our latter-day professional brethren over the worship of the laity at the shrine of the various "pathies," heresies and schisms which have badgered and rent the profession in more modern times. Traveling on horse or in rattling gig through rain or snow or broiling sun, he pursued his journey fearlessly and with self-complacency, fearing neither that his case will not patiently await his arrival or that his ministrations will not be gratefully accepted.

Living a man of toil, a man of many expedients, a friend in need, an unselfish adviser in trouble, a good liver, but not a sponge or sapper upon his kind, giving the best and all he was possessed of, withholding nothing, he received as compensation such as his clients were able to bestow upon him. He dies, beloved and mourned as friend more than doctor, and is enshrined in the hearts of his patrons to their ending days as one the like of whom they shall never see again.

Such was the general practitioner of 50 years ago whom a few of us still remember and honor.

Compare this with the present day—the swift twentieth century. Like the evolution in locomotion and electricity, such is the development of the medical profession in these days. Empiricism lost in scientific theory; sentimentalism superseded by cold materialism; generalization by specialization and standardization *ad infinitum*.

Humanitarianism in its various forms, as clubs, societies or what not, afford sympathy, advice and shelter for all of our troubles, be they large or small, for money or without price to those unfortunate enough to require the gift.

We have in this great progress, but it is advance not without sacrifice. The same rule that has been applied to all classes of trade in the last 50 years is gradually being modified to suit the professions. Labor is no longer divided into the apprentice, the journeyman and the master mechanic. The cobbler, the tailor, the skilled artisan, even the butcher, are disappearing, and in their places we find each trade divided and subdivided into piece makers and part doers, and the factory appears.

These have their counterpart in our profession in the specialist and the hospital.

The present condition of the profession in many particulars seems analogous to the department store, with men skilled in certain lines over its special branches; over these a general manager, who introduces the incoming customer to the respective counters, where are displayed the wares of that especial department. Substitute specialty for department, patient for customer, and maybe general practitioner for manager, and you have the analogy complete.

We note in all this the gradual loss of the predominating personality and responsibility of the one-time individual and the absence to a great degree of the complex reasoning in determining

definite conclusions from a multitude of premises. The syllogism is simplified, a conclusion arrived at, and the determination of further deductions passed on to the next.

The loss of that delicacy of perception of touch, of pulse, of physical signs are compensated for and improved upon by the material, the mechanical, the physical and scientific substitutes.

A patient no longer has fever because his skin is hot and dry, his lips and tongue parched, his breathing rapid, his face flushed, his pulse bounding. No, he has fever because the thermometer shows that his temperature is above that point considered normal in mankind in a state of health.

To determine the rhythm and regularity and the pressure of the circulation we rely no longer upon the touch, more or less skilled by long and tedious experience. We have instead the sphygmograph and the sphygmomanometer, a material and mechanical means far more accurate and definite than the human touch and judgment. We have the recent wonderful applications of electricity for diagnosis and treatment, the X-ray, the high potential currents, the violet ray, etc.

The multiplication of the requirements for preparedness for our work, the different divisions and subdivisions of the different parent branches of medicine, the different material aids requiring intimate knowledge of mathematics, the physical laws of light, heat, motion, force, electricity; the modern application of chemistry to living phenomena in physiology and chemical reactions in disease; the development of hypotheses, theories and facts in histology and pathology from the use of the microscope; the measuring and counting of the corpuscles of the blood; the theory of toxins—antitoxins, the opsonic index, and so on, make the study of medicine appalling even to those of most liberal preliminary education because of the great variety and ramification of its branches. Hence the necessity of specialization, of standardization.

Once, as we have seen, the whole domain was embraced in one, the general practitioner; but with the onward tendency to specialize our activities is evolved the piece worker, the specialist, and naturally the care of the sick subjected to this same concentration, specialization and standardization, evolves the modern hospital. All honor to those who rightfully, having prepared themselves, properly pursue their calling as part workers, piece workers or specialists in any branch of science or medicine.

But where is the general practitioner in all this, the man behind all this and from whose training and experience the specialist is or should be evolved? What place is left for him, or through the law of survival, only of the fittest and the gradual elimination of that which is no longer necessary, is he to be lost? Eventually I believe he will be superseded, but not for a long, long time, unless through his own wanton unworthiness and wilful sloth. The modern laity, now better educated in medicine preventative, palliative and curative than the physician of 50 years ago, may possibly in

the distant future attain an elevation which will empower it to prevent by wholesome laws many more of the ills with which they are affected, and finally such an education and discrimination as will enable it without an intermediary to apply to each particular specialist and obtain the lacking part or repair for that which refuses longer to work in harmony with the whole. But this is a long, long way off. All is not progress. Now and then in these cool, calm materialistic times some serious nerve-racking, shocking retrograde movements occur. Maybe they are reactions and the protestations of those yearning for a return to the imaginative and the sentimental. I do not know.

In an article in the *British Medical Journal* entitled "The Faith That Heals," speaking of one of these more recent movements—"Christian Science"—Dr. William Osler says: "To deny the existence of disease, to deny the reality of pain, to disregard all physical measures of relief, to sweep away in a physical ecstasy the accumulated wisdom of centuries in a return to Oriental mysticism—these, indeed, express a revolt from the materialism of the latter half of the nineteenth century at once weird, perhaps not unexpected and to a student of human nature just a bit comic. One cannot but smile to think that this has happened at the very time when the Goddess of Reason was priding herself on the brilliancy of the accomplishments of her devotees. It is, indeed, a lesson in humility and serves to remind us that our deliciously credulous human nature is still plastic and receptive."

The solution of the question as to the continuance of the general practitioner of medicine and his position in the community depends chiefly upon himself and partly with the laity. After the laity, to whose credulity and ignorance the brilliance of the occasional success of the self-chosen specialist appeals, becomes able to appreciate the disasters and frauds often perpetrated upon them by charlatans, quacks and commercial specialists; after the general profession, by proper preliminary qualifications, have prepared themselves to enter upon and by increasing application and study pursue their work; after they earn and win the confidence of their clients because of their intellectual worthiness; when the general body of the profession, through their organization and by law, prescribe the metes and bounds of specialism; when the enjoyment of the privileges of specialism and special fees are balanced by the required retirement from competitive practice in other fields; when one of the duties of the specialist will be to advise with the general practitioner, and not with the general practitioner's clients, and he is taught that it pays best to restore them to his patron with no less or increased confidence in the general profession; when self-laudation and advertising in the public press is frowned upon and punished; when the laity and the profession learn to value at its true worth, and only at its true worth, mere manual dexterity, and at its true worth, on the other hand, the value of correct diagnosis, the value of him who values and protects life, even imperfect life, over desperate chances and idle ex-

ploitation—then will the medical doctor take his proper place and resume his proper sphere. As master he will control where his patients go and what shall be done to his clients in surgery as well as in treatment. Open to conviction and advice from men who have gradually, after a fair term of experience, withdrawn themselves from the ranks of general practice to devote their lives honestly to the pursuit of certain special lines, subjective to those whom experience and frequent practice render especially skillful in technique and operation, liberal in their conception of reward, but still none the less the guardian of their patients' fate and fortune always—this is the true position of the general practitioner if he is to survive, and the only safety for the laity from the aggressive greed and scramble of modern specialization.

Progress, like truth, is mighty and will prevail. Sulking, skulking, lounging or complaining will not check her advance. Like the wheels of the Juggernaut, she crushes those who resist and do not stand aside. Knowledge—science, or, as I should rather call it, "truth"—like a mighty tide, irresistibly pursues its onward way. We cannot check it if we would. We must submit, and, using brain and brawn, must struggle not against, but with it. We must so educate ourselves to worthiness, and the laity to a perception of our worth, that we may harness these mighty forces, and with firm and resolute hand guide and distribute their power so that in obedience to our wishes they perform their proper functions, and do not run wild, spreading desolation among our people and carrying destruction to ourselves.

IMPORTANCE OF THE ANALYSIS OF WATER AND MILK.

From the Bureau of Bacteriology (Dr. Wm. R. Stokes).

SINCE the inauguration of the work under the new Pure Food and Drugs Act the laboratory of the Bureau of Bacteriology has been receiving a large number of samples of water and milk from the various cities of Maryland, such as Hagerstown, Elkton, Centreville and other smaller towns. This is a very hopeful sign, and shows that the good work accomplished by the profession and public-spirited laymen of Maryland in securing proper legislation is already bearing fruit. In the American system of government where local self-government exists one of the most important duties of the State Board of Health is to stir up sentiment in such places, so that the citizens, through their health officers, can learn of the condition of the various raw foods, such as water, milk, oysters and raw vegetables. After having obtained this information from the State Board of Health these communities can greatly assist the State agency in carrying out measures to prevent the use of unsanitary and impure foods, and thus lessen the mortality, especially from the various intestinal diseases which at present exact such a heavy toll from American citizens.

THE REMEDIAL, ECONOMIC AND ETHICAL VALUE OF EMPLOYMENT OF PATIENTS AS UTILIZED IN STATE HOSPITALS.

By Robert P. Winterode, M.D.,

Assistant Physician at the Maryland Hospital for Insane, Catonsville, Md.

IN the earlier days, when the mere suggestion of the term "insane" presented to the public mind, and therefore to a large extent to the official consciousness, a horrifying mental vision of madmen with matted hair and torn garments, the custodial aspect, with the necessary restraint, in the treatment of mental defectives was the only phase of the problem considered.

Pari passu, with the advances of modern psychiatry in the care of these helpless ones, freedom, as a welcome visitor, has broken down the bars of restraint and permitted fresh air and sunshine to penetrate the corners of the darkest dungeons.

Today every available curative means known to science is utilized to awaken one to his former self, to arouse him from that lethargic state, and create a renewed interest in himself and his fellow-men, so that he may realize that he is no longer a hopeless wreck, subject to the dictations of a disordered mind, but a human being endowed with life, will power and energy, capable of assisting in the application of such methods as are intended to restore him to his sphere as a useful constituent.

On a visit to a hospital farm, where the employment of patients has passed the experimental stage, you will see numbers of contented laborers in well-organized groups, each having a capable director.

The more skilled squads build roads, construct bridges; others work in timber, some pick up stones, carry brush; others are taught to use the wheelbarrow. The latter is the light group, which serves as a stepping-stone to work of higher order, requiring more mentality and complex co-ordination. The well-groomed lawns, with tastefully planted flower beds, reflect credit upon the lawn group.

During the winter months they dispose of the ice harvest like "Way Down Easters;" others sprout potatoes, strip willows and clean roads after fresh snowfalls.

The industrial shop presents activity everywhere. The cabinet-maker, from experience, is well acquainted with hospital needs, and constructs furniture accordingly. The tailors are cutting, designing and manufacturing everything in the line of wearing apparel. The cobbler is busy mending shoes. All new boots and slippers worn by patients are made by trained hands in the shoe department. The willow worker knows no bounds as to his skill in designing and making everything conceivable in the reed and willow industry. The mattressmaker takes pride in producing an

article guaranteed to induce sleep. The painters assist in adding attractive coloring to the various buildings; others are in the bakery, dining-room, boiler-house and stable.

The women find pleasure in the sewing-room, others in the laundry; a number assist in the vegetable kitchen preparing vegetables for the table, while others add neatness and cleanliness to the wards.

A fact greatly to be deplored is the difficulty in finding some outdoor employment for women which will be both suitable and practical. The statistics of the past 10 years, showing that the death rate from tuberculosis in State hospitals has been more than twice as great for women as men, furnishes convincing evidence that confinement, lack of facilities for outdoor employment figure prominently as strong predisposing factors in the production of this dreaded disease.

In New York and other States woman labor has been utilized successfully for picking berries, gathering vegetables and working flowers. The value of their services has never been estimated sufficiently high to warrant its adoption in Maryland.

Even the slight exercise of walking to and from the work would stimulate deep inhalations of fresh air and thereby assist nature in building up many of debilitated constitutions, which sooner or later may succumb to tuberculosis.

Another perplexing problem is how to occupy the large numbers of terminal demented, also to re-educate the constitutional inferiors so that they may be rendered useful to themselves and the institution.

Experiments have taught us the simplest thing some of this type were capable of doing was passing a football from one to the other, then later to join hands and go through various figures. This, with time, progressed to marching to music. After these preliminaries were mastered the women were taught threading a needle, also sewing in a straight line.

The men were instructed in the performance of simple tasks in the wards—shining knobs, pulling floor polisher and various other things.

To obtain encouraging results from a systematic method of re-education and retraining, it requires the skill and patience of those specially trained, who will be sufficiently compensated to devote all their time to this work. The ordinary attendant, anxious to accomplish so much work, utilizes only the best workers, and neglects the stupid and indifferent type who are in need of the stimulus.

The establishment of the School of Civics and Philanthropy of Chicago has supplied a long-needed necessity of an institution where the methods of developing those not ordinarily responsive are taught. It is to be hoped the time is not far distant when every State institution will fully awaken to the many advantages

to be derived from having one of their nursing corps competent to carry on such work.

An ideal and economical plan, with the view of placing a patient in home environments consistent with the protection and supervision, is the colony system. The idea, which is too old to be considered an experiment, is steadily growing in favor and has been operated with great success in various States of this country and abroad.

This plan affords special advantages for the treatment and classification of epileptic insane. Similar plans of treatment for convalescent tubercular insane have found favor in other States. Each possesses certain advantages to be taken up later.

As an incentive to renewed effort, also a reward for efficient work, various types of amusements and diversions should be provided.

With the intention of finding something new which would prove instructive and practical, at the same time serve as a stimulus to encourage new industries and consequently develop many workers not otherwise interested, the idea of an annual exhibit suggests itself. This feature would resemble a county fair, comprising a display of farm products, specimens from the conservatory, work of the various departments of the industrial shop, ladies' handiwork of various kinds, signs describing the exhibit, skill of those assisting the painter, booths to be constructed by the carpenters. All patients who are represented by exhibits will have the privilege of inviting those whose mental condition, in the physicians' judgment, warrants such. Prizes awarded by disinterested parties as judges would doubtless urge those exhibiting to improve the quality of their work, at the same time appeal to others to compete the next year. Those invited would no doubt be amused and perhaps be encouraged to file their name as a probationer for one of the industries. Everything pertaining to the success of this affair should be left to the discretion of patients under the supervision of the nurses and attendants, thus affording opportunity to display originality, taste in decorating, judgment and certain responsibilities.

For the purpose of emphasis the remedial, economic and ethical value of work-therapy will be considered under separate headings. The first I ask your attention to is the remedial.

The remedial value of labor cannot be more emphatically expressed than by the words of Dr. Warren Ferris, in which he states: "We have found in the experience of many years that the best agency in the treatment of the insane is therapeutic occupations and industry. The re-establishment of the faculty of concentration and attention in the vast majority of cases is the first step toward mental rehabilitation."

Compare the inactive, monotonous existence of large numbers of patients lounging in the wards in enforced idleness with those

constantly engaged in some useful and creative employment. The beneficial results derived therefrom are obvious.

In former years occupation was only considered practical for the large class of chronic cases, but recently it is a well-recognized fact that light outdoor diversion has proved a boon to many cases of recent origin by promoting convalescence, thereby hastening the date of recovery.

In the depressive psychoses, after the initial rest and tonic treatment have been given, light work in the open air and sunlight, which distract patient's mind from his morbid ideas and stimulates muscular tone, is of great value.

Oftentimes in stuporous conditions most encouraging results can be obtained. To assist the neurasthenic to eliminate his hypochondriacal ideas the great advantage of occupation is noted. It is surprising to observe that patients who have passed through catatonic stupor and are apparently bereft of active intellect show remarkable improvement when suitable exercise is provided. Even though the effort is for a considerable time mechanical, it serves as an exercise, improving metabolism, and is far better than protracted inactivity and seclusion, which are the necessities of introspection.

However, it is with the large group of cases who are hopelessly insane that our efforts have been rewarded so generously. Unless some diversion is found they either become restless, disturbed, wandering aimlessly up and down the halls, quarrelsome and most difficult to manage, or they lose all interest in themselves and environments, become apathetic, sloven and careless, and soon deteriorate into physical and mental wrecks.

Occupation to the stupid ones at first may have but little meaning, but after persistent efforts, under encouragement, may develop capacities which they had no idea of and which will serve them in good stead, even though incurable, to become contented, tidy, well-behaved and useful members of the household.

It is not advisable, if possible, to allow the patient to follow his former avocation. One who has formally led a sedentary life should be employed out of doors, and *vice-versa* at something as nearly opposite as possible. By making an entire change new centers are brought into use, new objectives placed before him, new emotions provoked, and the attention is for a time relieved of the dominance of insane ideas and the nervous system as a whole is placed in a more normal state of tension. Of course, in some instances where they cannot be induced to follow anything other than that with which they are familiar, it is better to permit them to follow their own inclinations rather than to remain idle and become irritable and discontented.

Those whose psychoses have been traced to either alcoholic or drug addictions, a change of occupation is especially indicated, so that when they are thrown on their own responsibilities they may

be attracted by fields anew, with more favorable surroundings and new associates, which are strong factors in causing newly formed habits to yield to old tendencies.

The advantages of curative value in the colony system have been found to lie in the fact that it affords important change of remedial value, means of classification, with greater freedom in surroundings as nearly homelike as practical.

For epileptics it is invaluable; removes from the wards a great source of annoyance to other patients, and places their family in a better atmosphere, where every facility is provided for dietary, hygienic and disciplinary treatment, so essential to their comfort and improvement.

The absence from the halls of disturbed cases with vicious habits and impulsive inclinations, also the idle, untidy and depressed, speaks well for the systematic graded method of retraining.

As a practical demonstration of the restorative worth of labor the following is submitted:

Of the 48 male admissions to the Maryland Hospital this year, 41 per cent. were classified as incurable, 20 per cent. of these being senile, 33 per cent. curable, 20 per cent. incapacitated physically for any work, four-one-hundredths per cent. were criminal insane. The percentage of each class employed are as follows: Of the 10 senile, 40 per cent. are engaged in light work in the wards; of the 16 curable cases, all have been assigned to labor having a remedial and educational value; 43 per cent. of these have been discharged as cured; 18 per cent. have shown marked improvement; 27 per cent. indicate slight improvement. Of the 20 per cent. classed as chronic cases, all have been engaged at outdoor work of educational and economic value. The two criminal insane assist in the ward, their classification not permitting of work necessitating risk.

To illustrate in detail the beneficial results obtained by employment would require the citing of a number of cases, but to minimize time will refer to two only.

The first instance pictures the importance of committing patients immediately to State institutions rather than to allow them to deteriorate in almshouses, where absolutely no occupation or facilities for treatment are provided for.

A., white, male, age about 35; no previous history other than that he had been at one of the almshouses for the past year. The superintendent who brought him to the hospital said he requested his transfer because he tried to set fire to the building. When admitted patient was apparently both a physical and mental wreck. He had not taken nourishment for four days. Mute, entirely uncommunicative. Alone, would mutter incoherently. Absolute indifference to himself and surroundings. At times, from certain fixed positions of the head, was thought to be acting in abeyance

to hallucinations. Previous to being confined to bed he spent the greater part of the day crouched in the corner of the room on the floor with head bent on chest and knees drawn up, presenting a most dejected picture. After three weeks of rest in bed and feeding artificially, he rallied sufficiently to take nourishment voluntarily, and seemed brighter, though still inaccessible and helpless. In six weeks he gained 12 pounds. Two weeks following he sat up, and a week later, in an attempt to get him interested, the handle of a floor polisher was placed in his hands, for which he showed great displeasure by threatening the attendant. After many days of persistent efforts we succeeded in getting him to walk up and down the hall, at first pushed along, later unattended, but when he arrived at the end of the hall would not turn around voluntarily; an attendant and faithful patient were posted at opposite ends to assist him in this act. Ten days afterwards he assisted in the work on the hall with encouragement; later was assigned to one of the farm groups, where he continued to improve both mentally and physically, gaining in weight, became tidy and an excellent worker. Six months after admission was given parole of the grounds, six months later discharged, and letters received from him from time to time indicate that he is still in good health.

The second case shows the early indication for occupation. B., male, 29 years of age, native of Russia, and a tailor by trade. Treated at a private sanitarium for a year. Family history negative. Cause, overwork. Three months previous to and after admission was impulsive and highly irritable. He was controlled by delusions of a somato-psychic type. Complained of paraesthesias throughout the body. Owing to delusions in regard to food, subsisted principally on milk. He was inactive, sloven and careless, lounging around the room most of the day. Was admitted to the hospital June 25, 1909. Constant irritability, negativism, stereotypy of attitude and absolute indifference are characteristic symptoms of his present condition. First evening in the dining-room became impulsive, broke several dishes and threatened physician and attendant with a chair. The next day limited his diet to a small quantity of milk; after that refused all nourishment, with the excuse that he was suffering with chronic stomach trouble, also the food was unclean. Analysis of stomach contents showed nothing abnormal. He was fed artificially for three weeks. An effort was made to alleviate his gastric trouble by lavage with suggestion. Owing to depression following this method, was abandoned after two treatments. Becoming irritable, morose and difficult to control, was transferred to a disturbed ward. One morning, while enumerating to the physician his usual neurasthetic ailments, he suggested massage as a proper treatment for his trouble. Utilizing this idea, we recommended exercise obtained by sweeping or polishing the floor as the most

effectual means to accomplish the desired result. With the assistance of the attendant he worked 10 minutes the next morning, gradually increasing the time each morning, until in a week's time he worked well without assistance. He was transferred to his former hall, where he ate solid food voluntarily and became interested in the work of the hall. Two weeks afterwards he joined the road squad, where he has proved a most willing and interested worker. During the past week he has participated in the dances. Though he still exhibits at times a certain neurasthenic reaction, and is probably controlled by some vague delusions, since he has been employed has been free from any impulsive tendencies, is more tidy, shows changed conduct toward relatives and fellow-associates, and has privilege of grounds unattended.

The next phase of the question to be considered is the economic. Though there may be strong opposition by some advocates of this form of treatment, to exploiting the time or labor of the inmates of our institutions for commercial purposes—in other words, opposed to making anything of profit—it is a well-recognized fact that industry of any kind begun in a State hospital must prove itself in order to be accepted by the public. It must be started with as little material demands as possible upon the interest or the financial resources of the public. The consideration received will be in proportion to the results shown and the ability to use the means at hand. These are well-recognized truths. It is, however, utterly impossible ever to make a hospital for the insane self-sustaining, as this labor cannot be depended upon. Their efforts should not be forced, but encouraged and indulged, otherwise they balk, and what little good has been accomplished by the initiatory step is lost. Nevertheless, eliminating many days they refuse to work, also times when their work is inconstant and below standard, under proper management most gratifying results can be obtained as the following will indicate.

In order to place a conservative valuation upon the patients' work it has been necessary to compute the earning capacity of each in terms of hired labor. With the assistance of the farmer the writer has concluded that the efforts of 83 patients, comprising four of the farm groups, which we will designate as A, B, C and D, would be equivalent to the labor of 32 able-bodied workmen. The cost to the hospital for the hire of 32 men at \$1 per day would be equal to the maintenance of 41 patients. In other words, the 83 patients provide for half their number. The work of the four patients, or two in terms of hired mechanics, assisting in the paint shop is equal in value to the per capita cost of more than two patients. The same number in the bakery provide for over two of their quota. Those engaged in the various departments of the industrial shop not only provide for themselves, but also sufficient to cover the cost of maintenance of three of their fellow-associates. Of course, it must be taken into consideration that the willow

worker, two of the tailors and the cabinetmaker are following their former avocations.

A saving to the hospital yearly of the cost of clothing, furniture and articles destroyed, also considerable for close supervision to avoid assaults, is another practical illustration of the economy of occupying the untidy, vicious and destructive.

The most economical plan of providing for the insane, reducing materially the cost of accommodations as well as maintenance, without eliminating essential comforts, is exemplified in the farm colony.

The absence of a market other than one, with the ever-present possibility of coming in contact with organized labor, has to a great extent prevented the various departments of the industrial shop from encouraging an increased production. As a solution of this problem, I would offer as a suggestion a co-operation of industries of State institutions—in other words, an interchange of such articles of home manufacture as are considered practical. I feel assured that we are justified in stating that the State institutions could produce articles better adapted for hospital uses and at a sufficient profit to cover wear and tear of machinery, also materials used in the manufacture, at a lower figure than the same could be purchased for on the market.

Furthermore, from experience we are in position to eliminate many objectionable features in wearing apparel, shoes, furniture and other articles utilized for hospital economy. For example, the style of slipper for house wear cannot be purchased ready made, and if these were ordered special, would cost two or three times the actual expense to us. Also, if we are fortunate enough to have a cabinetmaker as our guest, furniture better adapted to our needs, both for durability and sanitary reasons, can be constructed at the cabinet bench. Many of the extras which increase the price of clothing can be eliminated and still subserve the same purpose.

I am better prepared to discuss the possibilities of such an undertaking as applies to the Maryland Hospital. Here the printing shop is sufficiently equipped to furnish all the printing, annual reports excepted, for the State institutions. Our willow industry could probably supply baskets, hampers, also willow furniture of artistic design.

Now, as the neighboring institutions are well prepared to meet the necessities in other lines, we would much rather patronize one who is vitally interested in our progress and advancement than outsiders, who are principally concerned for financial considerations.

To carry into effect such a plan it would be advisable to have a joint meeting of the various State institutions to discuss the practicability of the idea, with a view of ascertaining what production would be necessary to meet the required demands, thereby to de-

termine the most beneficial industry or industries to be established at each.

The ethical question, reduced to the simplest terms, is, How shall the average insane man's social condition be made to approximate in safety with the maximum amount of benefit to himself that of his sane brother who is self-supporting and at large in the community?

It is known that many psychoses may be traced to autointoxication, but a large percentage of mental breakdowns, as quoted from Meyer, "cannot be better understood than as disorganizations of habits resulting from conflict through poor adaptation and unfavorable environments." With this hypothesis, what shall we infer? That occupation, the ideal method of hygienic application of what the patient is capable of, is at the bottom of success of the treatment of a large number of insane.

A patient on entering the portals of an institution is removed to a healthy atmosphere, where every effort is put forth, through the medium of employment, diversion and amusement, to encourage and maintain strict decorum, promote self-reliance and, through the assumption of responsibility requiring exercise of judgment, develops self-control.

Thus the advantage of farm colonies to State hospitals is noted.

Each member of the household is placed in home surroundings with proper supervision, where pernicious habits are corrected, faulty ideas replaced with rational reasoning, sound thinking assumes the rôle of impaired judgment, and impulsiveness surrenders to self-control.

From the above statements the following conclusions may be drawn:

REMEDIAL BENEFIT FROM A THERAPEUTIC STANDPOINT.

To the Curable Cases.—When instituted in the incipency of psychoses offers an opportunity for early mental restitution, thereby affording facilities for the treatment of new cases.

To the Incurable Cases.—As a means of re-education, transforming those of filthy and vicious habits with destructive inclinations into tidy, contented and useful members of the household.

To Alcoholic Psychoses and Drug Habitues.—Acting as a prophylactic, lessening the predisposition to relapse by creating new habits, instruction in new vocations, which will encourage inclination along different paths having more favorable environments and different associates.

Farm Colony.—Relieves congestion, admitting of classification, with home environments and greater amount of freedom.

Economic Value.—The utilization of products in the hospital, manufacture of which has been the means of restoring them to health. The saving of cost of furniture, clothes and other articles which may be destroyed, also extra supervision of patients to pre-

vent assaults, to say nothing of the quantities of hypnotics which would be necessary were they not engaged.

CO-OPERATION OF STATE INDUSTRIES.

1. Provides a market free from competition with organized labor.
2. Hospital can produce articles cheaper and better suited for their needs at sufficient profit than can be purchased on the open market.
3. Encourages development of other industries, also acts as an incentive to instruct patients in skilled labor, which will come in good stead when discharged.

To the State.—Relief of burden of taxation, the necessary consequence were they to become charges for life.

Farm Colony.—The most economical plan of caring for the insane, with rational reduction of accommodation as well as maintenance, without reducing essential comforts.

ETHICAL VALUE.

Placed in homelike surroundings, with supervision, where pernicious habits are corrected; provides a disciplinary agent and reorganizes habits, or, in other words, prepares him for competition with his fellow-men.

From the Bureau of Vital Statistics (Dr. W. Frank Hines).

POLIOMYELITIS.

A CIRCULAR-LETTER from Surgeon-General Wyman of the Bureau of Public Health and Marine Hospital Service regarding Anterior Poliomyelitis, has been received. Such information as we possess from statistics furnished to August 20, shows during 1909 there were no cases reported. So far we have an estimate of 20 for 1910.

INFANT MORTALITY.

The intense heat has undoubtedly caused an increased number of intestinal diseases of infants. Typhoid fever is already on the increase over the preceding month, and we have reason to believe that August will show further increase.

The increased interest shown by the people in the sanitary conditions of the State, and the forming of societies in various counties where such matters are discussed, not only because they want to avoid illness, but because they have learned that monetary losses are to be considered, must result in great good.

MIDWIFERY LAW.

The midwifery law will, we trust, soon be in effect. Much more machinery to run the law than was expected has caused the delay. The reports of birth are fairly good; the reports, of course, are better.

W. FRANK HINES,
Chief.

BENJAMIN RUSH AND EARLY AMERICAN MEDICINE.

SIXTEENTH OF A SERIES OF ESSAYS ON THE HISTORY OF MEDICINE FROM THE EARLIEST TIMES.

By H. M. Cohen, M.D.

CHAPTER XVI.

MEDICINE in America can point with pride to an extensive list of famous physicians. There are names to be found here and there of more than unusual importance—men, whose influence not only manifested itself within the bounds of America, but which made its way over the two great oceans into foreign lands. However, in selecting conspicuous medical benefactors, we can only be guided by the results of their lives as posterity views them.

The history of our country is yet too young to have produced many epochmakers, and as yet our quota of really great men must be limited to those few who have arrived at the pre-eminence acknowledged by the entire civilized world as a result of extraordinary achievement. In our day and generation there are, no doubt, to be found names long destined to influence medical thought, but for obvious reasons they must be left for the future historian.

Little can be said of the pioneers of the early days, except that they shared the hardy, adventurous character of their time. Here and there we find a name of unusual brilliance. The early days of the eighteenth century produced a Zabdiel Boylston, one of a group of clever Boston physicians, a man who came first into prominence in connection with Cotton Mather's fight to establish smallpox inoculation in Massachusetts.

An epidemic of the dread disease had manifested itself among the colonists in and around Boston, and that famous divine, having come into possession of a paper on the subject written some years previously by the Turkish physician Timonius, he suggested to a medical friend that the inoculations be tried. However, Mather received little encouragement and was compelled to go from one medical man to another in search of assistance. Boston doctors turned deaf ears to all his entreaties and eloquent arguments, and, with an abiding faith and tenacity of purpose which characterized the great churchman, he went over into the neighboring town of Brookline and sought out the young and energetic Boylston, who promised to take up the work.

It is needless to state that at once he aroused the Boston physicians' opposition, and they left no stone unturned to create a popular movement against him. Two camps suddenly sprang into existence—the one led by the dauntless Mather and his energetic and enthusiastic co-worker, Boylston; the other by Dr. Douglass, the recognized leader, and his colleagues, which meant practically the entire profession.

The first subject to receive the inoculation was a Mr. Walter, a

Roxbury minister and nephew of Mather. The opposition camp had done its work well. Doctors and press succeeded in inciting the mob, that mob that is found in all times and in all climes, ever ready to do the work of someone's malice (we even have the medical mob), and the poor brave minister was visited one night by the hoodlums of the neighborhood, who stormed the house in which he was convalescing, and after heaping the usual insults upon the luckless heads of all concerned, hurled a lighted bomb into the house, which fortunately did little harm to the occupants. And, as for poor Dr. Boylston, his brother-physicians saw to it that his life was made a burden to him. His mere presence on the street was the cause of rioting, and in fear for his life, he was compelled to limit his professional calls to the hours after dark. Lynching was even threatened, and a bomb was thrown at his house, but proved harmless.

Such was the reception accorded the intrepid pair in their endeavors to alleviate the terrible smallpox scourge. But the work went on. The poet has remarked that "Truth, crushed to earth, shall rise again." So, although these two dauntless men and their assistants were pounded and crushed, they, phoenix-like, disappeared, temporarily only, to soon rise again, brighter and stronger than ever.

The fight went on, until one day it dawned on the multitude that somehow the opposition was all wrong. Two hundred and eighty-six persons had been inoculated, of whom only six died. During this same period 5759 cases developed in the ordinary way, and 840 of them died! This was a ratio of one in forty-eight to one in seven! These were facts, and the plain people believed that "figures never lie." So they hailed the staunch Cotton Mather and the brave Zabdiel Boylston as benefactors, and in place of epithets and bombs, they now found waiting for them laurels and praises.

Boylston became the most popular physician in the colony and later paid a visit to Europe, where he was made a member of the London Royal Society and was presented by George I with 1000 guineas. He returned to his native Brookline, where he lived the remainder of his days in peace and contentment.

And as for the opposing colleagues, what of them? Very little is known and less is cared. It may be surmised that some among their number were conscientious in their opposition. But the mob (the medical mob, shall we say?) never repented, we fear. Someone has facetiously remarked that every time a certain great man has a cold, all of his followers begin to sneeze. We fear that in days gone by (certainly not in our own time) there existed some such condition in medicine.

But we leave Massachusetts, and wander down New York way. There we find Cadwallader Colden—not only one of the leading physicians of the period, but a great statesman; in fact, he is known principally to posterity in that capacity. So we pass on

to an early Philadelphian—Dr. Thomas Cadwallader, the noted author of "An Essay of the Iliac Passion," extensively quoted in the literature of the period. Cadwallader was not only a leader, but a man of great good nature. As a matter of fact, that quality in him is said to have once saved his life. Mumford, in his clever "Narrative of Medicine in America," repeats the following anecdote:

In Doctor Cadwallader's neighborhood there lived a "provincial officer," who became possessed with the idea that the only possible way he could or would leave this world was by the route of the gallows as an executed murderer. In accordance with this theory, he set out one day, gun in hand, intending to kill, like a certain Biblical character, the very first person he should encounter. He had just sallied forth when a pretty girl came along. She was so beautiful he decided to pass her by. Next he espied our genial Doctor Cadwallader, who greeted him kindly with a "Good morning, sir; what sport?" The man with the firearm was so overcome by the courtesy of the jovial doctor that he also passed him by. But the next person was not so fortunate, being, as we may suppose, neither good-looking nor courteous, and he was shot dead. The man with the gun was duly hanged.

In the South we find such late eighteenth century names as Chalmers, the South Carolina friend of William Hunter; John Moultrie, whose death, at the time, was regarded as a public calamity, and whose popularity caused a number of ladies of Charlestown to bedew his grave with tears and go into mourning for him; William Bell, said by Thacher to have been the first white person born in South Carolina; John Lining (1708-1760), the first American physiologist, and Alexandre Garden, the friend of Linnaeus. These were all South Carolinians, and among the most prominent physicians of their century.

In Virginia during this period John Mitchell arrived at some prominence, and was one of the few colonial scientists to receive the high honor of membership in the Royal Society.

But we now come to a greater name—Benjamin Rush, the man of his century.

As physician, teacher, statesman, writer, soldier, patriot, Rush was equally prominent. As the most eminent American medical man of his century, he was instrumental in putting the profession on a better basis than it had ever been in America.

As teacher he proved the shining star of the Pennsylvania school, the Mecca of American medicine. As statesman and patriot we find him one of the constructors and signers of the Declaration of Independence.

Rush came of good, solid stock, the kind that was instrumental in converting a wilderness, roamed and mastered by the red man, into the modern America of his more powerful white brother.

Four generations of Rush's had tilled the soil in and about Byberry Township, 13 miles from Philadelphia, all following that

hardy Captain John Rush, who fought and suffered with Cromwell, and who, in 1683, immigrated into Penn's colony to try his fortune in the new land.

Benjamin Rush was born on the Poquestion Creek, in the year 1745. When the child reached his sixth birthday his father died, and the family moved to Philadelphia.

The boy was handed over to his uncle, the Rev. Dr. Finley, who headed an academy at Nottingham, on the Patuxent, in Southern Maryland, where he remained for five years, no doubt imbibing much wisdom and piety from his good uncle and teacher.

At 14 he became a student at Princeton College, and after a year's study was graduated as a Bachelor of Arts.

It was decided that he should enter upon a medical career, and he became a pupil of Dr. John Redman of Philadelphia, under whose kindly guidance he glided through the curriculum of the day.

In 1776 he went to Europe, and for two years he worked and studied at Edinburgh under the celebrated Cullen, to whom the American youth formed a strong attachment.

In 1768 he was granted the M.D. degree, he having already acquired the highest respect of his teachers and fellow-students.

For the next seven months we find him in the London hospitals equipping himself with that practical experience which a student can get in no other way. Here he was friendly with Benjamin Franklin, who, it is said, furnished the money for a trip to Paris, after which the world-traveled Rush returned to Philadelphia and his home friends.

Rush had no sooner returned than he was elected to the vacant chair of Chemistry at the College of Philadelphia. But that position was more honorable than remunerative, and like many of his successors, he soon found that a young practitioner needs something more nourishing than honors upon which to thrive. So he encouraged patients to seek his services.

In spare times he took his pen in-hand and indited a great number of essays. He wrote for the public on numerous topics, and urged the abolition of slavery at his every opportunity.

He lectured to the laity on hygiene and kindred subjects, and in 1774 he published his well-known address before the Philosophical Society—"An Inquiry Into the Natural History of Medicine Among the Indians of North America, With a Comparative View of Their Diseases and Remedies With Those of Civilized Nations."

But now was no time to waste on the mere incidentals of life. Greater things were in the air. A new nation was being born, and men's minds and blood were afire with patriotism and a new and all-powerful love.

Rumblings there had indeed been for some years, but the clouds that caused them were now hovering overhead and ready to burst.

Benjamin Rush was no half-hearted laggard, and like so many others of those never-to-be-forgotten heroes, he hurled himself,

body and soul, into the fight, risking life, property and fortune that a new and free people might live.

So he wrote and preached, and went to the Provincial Conference of Pennsylvania, urging upon that body to recommend to the Congress to declare for independence. In due time we find him among the signers of the Declaration of Independence.

The struggle against the mother country enlisted the services of all patriots, and Rush became Surgeon-General for the Middle Department of the Revolutionary Army. In the following year he was made Physician-General, evidently a decided promotion.

But now comes the one unexplainable action of Rush's life. He resigned from the army just when it most needed his services. A number of reasons have been given to explain and excuse this, but one requires an elastic imagination to accept them: Firstly, "his sense of duty to the soldiers had led him to complain of wrongs in a certain department;" secondly, "there arose some coldness between him and the Commander-in-Chief."

How could the soldiers profit by the loss of so capable a medical man? How could any difference of opinion be permitted to cause the withdrawal from Washington of a man of Rush's undoubted abilities just at the time of that great General's direst struggles? Mumford says: "It was in February, 1778, the winter of Valley Forge, that Rush left the service. No darker time for the American arms had been known. Washington was keeping up the heart-breaking struggle against want, privation, mutiny, desertion, treacherous friends, open enemies in Congress, a neglected commissariat, an empty exchequer, a public confidence partly shaken by his apparent want of success, compared with the unmerited triumph of Gates at Saratoga when Rush took it upon himself, as it appears, to leave his post and join the notorious Conway Cabal."

Perhaps the matter has been somewhat exaggerated, but it is, nevertheless, a most deplorable event in a life otherwise so much to be commended.

Rush again took up the thread of civil life. He returned to his chair of chemistry at the Philadelphia Medical School, and in 1789 he succeeded, upon the death of Morgan, to the Professorship of the Theory and Practice of Medicine. When, in 1791, the University of Pennsylvania Medical School came into existence, Rush took charge of the chair of the Institutes of Medicine and Clinical Medicine.

Notwithstanding that he was at the age of 41 already a most successful and busy practitioner, he found time to take a great interest in politics and literature. But his principal effort was "An Account of the Billious Yellow Fever As It Appeared in Philadelphia in 1793." This, no doubt, established him as the greatest physician of his generation, and both Europe and America recognized in him an eminent leader.

In this epidemic it was Rush who first recognized the disease, and finally convinced his colleagues of the fact. But he main-

tained that the epidemic was of spontaneous origin, and that the disease had not been introduced from the outside. Its source was attributed to a pile of decaying refuse on a wharf. Of course, this was nearly a century before the "stegomyia" came upon the stage.

Rush at first regarded yellow fever as of a contagious character, but later changed his opinion to the contrary. A man of such varied talents could not but attract a deal of attention. Recognized as the greatest physician of his generation, honors were heaped upon him without number.

When the Federal Constitution was to be adopted, he was made a member of the Pennsylvania Convention, and somewhat later he became Treasurer of the United States Mint, a position he held during the last fourteen years of his life. He died, after an illness of four days, on April 19, 1813, of what was diagnosed as "a pleurisy," but which was probably pneumonia. He was mourned by the entire country, not only in recognition of his great medical ability, but for the fact that he had been one of the few surviving signers of the Declaration of Independence.

PROFESSIONAL CLUB'S OUTING.

THE Professional Club was entertained on August 24 by Dr. J. H. Branham at his country home on the Severn river, near Joyce's Station. The members of the club assembled at Camden Station and went to Joyce's Station by way of the Short Line, where they were met by automobiles and conveyed to the Branham residence and welcomed by Dr., Mrs. and Miss Branham. A luncheon, which included a choice selection of Anne Arundel watermelons and peaches, was served, after which the guests indulged in fishing or crabbing, aquatic sports or sat on the high bluff overlooking the beautiful Severn and swapped stories or indulged in day dreams. A most enjoyable day was spent.

The club is composed of a large number of doctors of West Baltimore, and holds its meetings at hall of the Church of the Incarnation, Madison avenue and Wilson street. Medical and surgical papers were read and discussed, and suggestions were made for the mutual improvement of the profession in the western section of the city. All regularly licensed physicians are eligible to membership. The membership is as follows:

Drs. George C. Shannon, E. Miles Wheeler, Wilbur P. Stubbs, William S. Love, Charles C. Conser, William J. Sullivan, Gilman P. Evans, Charles W. Hoffman, Paul M. Grabow, J. Thomas Wilson, Edward Plummer, William D. Olmstead, C. Frank Jones, George W. Jones, Wirt A. Duvall, Fred C. Jewett, John D. Blake, Charles W. McElfresh, J. W. Cole, E. Miller Reid, Page Edmunds, J. Dawson Reeder, Robert G. L. Lumpkin, James H. Branham, H. G. Branham, A. Wm. Schultz, H. V. McCurry, Isaac C. Dickson and A. G. Barrett.



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This Department is Under the Direction of the Commissioner of Health

NON-SPECIFICITY OF THE WIDAL REACTION.

By H. W. Stoner, M.D.

It occasionally happens that complaint is received from physicians stating that the report of a specimen of blood sent to the laboratory for diagnosis of suspected typhoid fever was positive, whereas the subsequent course of the disease proved it to be some slight febrile trouble from which the patient recovered in a few days. That these complaints are not without foundation cannot be denied, and that such a report may at times cause great inconvenience to the patient or the family of the patient and embarrassment to the physician is likewise true. It is the object of this article to recall to the mind of the busy practitioner how such conditions may occur and to give some instances of heterologous agglutinin reactions with the *Bacillus typhosus*.

HOW HETEROLOGOUS AGGLUTINATION MAY OCCUR.

As is well known, the Widal reaction or serum diagnosis of typhoid fever is made by mixing equal parts of a 1 : 25 dilution of blood serum from the suspected patient and an 18 to 24-hour-old bouillon culture of *B. typhosus*, so that the resultant mixture will be a 1 : 50 dilution of the serum. Municipal and State laboratories use the Westbrook method, in which dried blood is dissolved in 100 times its weight of distilled water. Since blood loses three-fourths of its volume in drying, this gives a dilution of 1 : 50. This is allowed to stand for one to two hours, at the end of which time, if clumping or agglutination of the bacteria has occurred, a diagnosis of typhoid fever can usually be made. This agglutination reaction is brought about by a certain constituent in the blood serum of patients with typhoid fever known as "agglu-

tinin" combining with a certain element of the bacterial cell termed "agglutinin."

That the action of agglutinin is special, but not specific, has been proven by many investigators, and while the agglutination of *B. typhosus* by the blood of patients with other infections is not common, it frequently occurs. It must be remembered that while a dilution of the blood serum of 1 : 50 has been found the best for an early diagnosis of typhoid fever, agglutination will take place at much higher dilutions, and sometimes at the height of the infection a positive reaction with a dilution of 1 : 2000 or even 1 : 4000 may occur. This not only applies to typhoid fever, but is true of other infections as well.

According to Ehrlich's side-chain theory, agglutinin contains receptors of the haptophore group and agglutinin contains receptors of the zymophore group. The receptors of these two groups by combining bring about a chemical interaction resulting in agglutination. Durham¹ believes that the receptor is not a compact, inseparable entity, but a complex body that may be split up into component parts, each of which may have independent action and exhibit individual structure. He has offered the following schematic explanation as to how one or more species of bacteria may be agglutinated by the same serum:

	<i>B. typhosus.</i>	<i>B. enteritidis.</i>	<i>B. colon.</i>
Serum constituents.....	A, B, C, D, E.	C, D, E, F, G, H.	E, F, G, H, J, K.
Bacillary constituents.....	a, b, c, d, e.	c, d, e, f, g, h.	e, f, g, h, j, k.

If the serum of a typhoid patient containing receptors of the zymophore group, A, B, C, D and E, is added to a typhoid culture containing receptors of the haptophore group, a, b, c, d and e, the maximum effect of clumping is produced, since all of the receptors of the agglutinin combine with all of the receptors of the agglutinin. If the typhoid serum is added to a culture of *B. enteritidis*, only a certain proportion of the bacilli or their constituents will be affected, as only the receptors C, D and E of the zymophore group can combine with the receptors of the haptophore group of this organism. If a culture of *B. colon* is mixed with the serum, still less effect will be produced, as there is only one receptor belonging to this organism capable of combining with the zymophoric group of the typhoid serum.

The factors C, D and E in this example are termed "group agglutinins" or "nebenagglutinins," because they possess the property of combining with receptors of both the typhoid and enteritidis bacilli. Thus in the schematic example above the "principle agglutinin" or "hauptagglutinin" of the *B. enteritidis* contains group agglutinins for both the typhoid and colon bacilli, and it is probable that all blood serums contain group agglutinins for many bacteria in greater or less extent.

Following the above example, we will assume that in the serum of a patient infected with *B. enteritidis* the receptors C, D, E, F, G and H of the zymophore group, combining with the receptors

c, d, e, f, g and h of the haptophore group, will cause an agglutination of the enteritidis bacillus at a dilution of 1 : 200. If this serum is added to a culture of *B. typhosus*, the zymophore receptors C, D and E of the *B. enteritidis* will combine with the haptophore receptors c, d and e of *B. typhosus* and should cause an agglutination of this organism at a dilution of 1 : 100. If the serum of a patient infected with *B. colon* would agglutinate this organism at a dilution of 1 : 300, the same serum would probably cause clumping of *B. enteritidis* at a dilution of 1 : 200 and of the typhoid bacillus at a dilution of 1 : 50.

Durham has pointed out that even further complications may be caused by the number of different receptors in different strains of the same organism. For instance, in two different strains of the typhoid bacillus the receptors of one strain may be 10a, 5b, 3c, 2d and 1a, whereas in the other strain they may be 1a, 2b, 3c, 5d and 10e. It is only reasonable to suppose that these respective strains will cause agglutination at the maximum dilution of their component serums, and this may explain why different strains of *B. typhosus* and other organisms give agglutination of the same serum at different dilutions.

The presence of group agglutinins in a serum can be proven by the saturation experiment first performed by Bordet.² If two portions of a serum that possesses the property of agglutinating two species of bacteria, which we shall designate as organism A and organism B, are saturated with the respective organisms, the portion containing the "principle agglutinin" saturated with organism A will no longer cause a clumping of organism B, because all of the receptors A, B, C, D and E of the zymophore group will have combined with the receptors a, b, c, d and e of the haptophore group, but the second portion of the serum saturated with organism B will still cause an agglutination of organism A at a lower dilution than formerly, since only the group agglutinins C, D and E have combined with organism B, leaving the receptors A and B of the serum to combine with organism A.

From the above it will be seen that the blood of patients with typhoid fever will not only agglutinate the typhoid bacillus, but may also cause clumping of other organisms; likewise the blood of patients suffering with other infections may sometimes cause agglutination of the typhoid bacillus. Indeed, Collins³ has produced agglutinins for *B. typhosus* by injecting animals with brewer's yeast, diastase, pancreatin, invertin, nuclein, mercapton, phenol, aleuronat, sulphur and phosphorus. The serum of a young goat inoculated with brewer's yeast that before injection agglutinated the typhoid bacillus at a dilution of 1 : 10, after the eighth inoculation caused a clumping of this organism at a dilution of 1 : 100. The same serum before inoculation caused agglutination of *B. dysenteriae* (Flexner) at a dilution of 1 : 20, and after the eighteenth injection clumping occurred at a dilution of 1 : 1000. An absorption test of the serum showed that all of the agglutinins were removed by saturation with the dysentery bacil-

lus, and about 95 per cent. were removed by saturation with *B. typhosus* and a culture of the yeast with which the animal was inoculated.

EXAMPLES OF HETEROLOGOUS AGGLUTINATIONS.

The following cases of heterologous agglutination with the typhoid bacillus have been selected from the literature:

Malarial Fever.—Villiez and Battle⁴ obtained agglutination of *Bacillus typhosus* with the blood from a case of malaria fever.

Paratyphoid Fever.—In a series of 42 cases of paratyphoid fever Muller and Graf⁵ found that the blood of 14 agglutinated both the paratyphoid and typhoid bacilli, the latter usually at lower dilutions.

Typhus Fever.—Wilson⁶ tested the blood of patients with typhus fever for agglutination with *B. typhosus*, and obtained a positive reaction in 18 out of 31 cases at a dilution of 1 : 50. Several of these were also positive at a dilution of 1 : 100.

Chlorosis.—Kohler⁷ has found that the blood of patients suffering with chlorosis occasionally gives a positive reaction with the typhoid bacillus.

Icterus.—In 1892 Jäger⁸ described an organism of the proteus group, *Proteus fluorescens*, as the cause of acute infectious jaundice (Weil's disease). His views are now generally accepted, and the blood of patients suffering from this disease frequently but not always agglutinates the typhoid bacillus.

Zupnik⁹ found that the blood of patients with Weil's disease frequently agglutinated *B. typhosus*.

Eckardt¹⁰ obtained agglutination of the typhoid bacillus with the blood from a number of patients with infective jaundice; in two of the cases at a dilution of 1 : 1000.

Ludke¹¹ tested the blood of two patients with this disease, and found that both agglutinated the typhoid bacillus at a dilution of 1 : 20.

Staphylococcus and Streptococcus Infections.—Lommel¹² obtained agglutination of *B. typhosus* at a dilution of 1 : 80 with the blood from a case of puerperal fever.

White and Pakes,¹³ in a case of streptococcal endocarditis, obtained agglutination of *B. typhosus* at a dilution of 1 : 200.

Megele¹⁴ obtained agglutination of the typhoid bacillus with the serum of a patient with abscess of the liver from which *Staphylococcus aureus* was secured in pure culture.

Lubowski and Steinberg¹⁵ report two cases of mixed staphylococcus and proteus infection of the mastoid cells, in which the serum from both patients agglutinated the typhoid bacillus, one at a dilution of 1 : 40 and the second at a dilution of 1 : 80. The proteus associated in the infection was agglutinated in both cases at higher dilutions than the typhoid bacillus.

Jochman¹⁶ reports a case of mixed streptococcus and *Proteus*

vulgaris infection of the mastoid, with sinus thrombosis and general sepsis, in a patient whose serum agglutinated the typhoid bacillus at a dilution of 1 : 160. The proteus was agglutinated at a dilution of 1 : 640.

Graf¹⁷ found that the blood of a case of streptococcal septicemia agglutinated the typhoid bacillus at a dilution of 1 : 100.

Pneumonia.—Kassel and Mann,¹⁸ in two cases of croupous pneumonia, found that the blood agglutinated the typhoid bacillus at a dilution of 1 : 50.

Iversen¹⁹ describes a case of pneumonia occurring in a patient 21 years of age. Agglutination tests were made with *B. typhosus* on the eleventh and thirteenth days of the disease with negative results. On the sixteenth and nineteenth days, however, the reaction was positive at a dilution of 1 : 500, and on the twentieth day at a dilution of 1 : 1500, and also at the same dilution with serum taken at post-mortem. At autopsy diphtheria bacilli and streptococci were found in the throat, and the latter were cultivated from the spleen, liver and tonsil. The lungs contained the pneumococcus and showed croupous pneumonia. There was no anatomical nor bacteriological evidence of typhoid fever.

Meningitis.—Van Oordt²⁰ obtained agglutination with *B. typhosus* with the serum from a case of endocarditis and meningitis due to the pneumococcus at a dilution of 1 : 40.

Jez²¹ obtained a positive reaction with the typhoid bacillus in a case of tuberculous meningitis at a dilution of 1 : 100.

Marcuse²² also reports a case of tuberculous meningitis the serum of which agglutinated the typhoid bacillus at a dilution of 1 : 100.

Symmers and Wilson²³ report 21 cases of cerebro-spinal fever in which the serum was tested with the typhoid bacillus and agglutinations obtained in seven cases—in three at a dilution of 1 : 50, in three at a dilution of 1 : 200, and in one case at a dilution of 1 : 400. One of these cases, the blood of which was positive on three different occasions at a dilution of 1 : 200, with two different strains of typhoid bacilli, came to autopsy. The meningococcus was recovered in pure culture from the purulent material of the brain and spinal cord, while numerous cultures from the spleen, mesenteric glands and urine were negative for the typhoid bacillus.

Tuberculosis.—Iversen²⁴ has reported three cases of pulmonary tuberculosis giving positive reactions with *B. typhosus* at dilutions of 1 : 250, 1 : 250 and 1 : 50, respectively.

Krencker,²⁵ in the examination of the serum from 26 cases of tuberculosis, obtained agglutination of *B. typhosus* in eight cases at a dilution of 1 : 50, and three of these were positive at a dilution of 1 : 200.

MISCELLANEOUS.

Stengel and Kneass²⁶ obtained positive reactions in 22 out of 1387 examinations of non-typhoid serums.

Symmers and Wilson²⁷ isolated an organism from Belfast water which agglutinated antityphoid serum at a dilution of 1 : 50. This serum agglutinated the typhoid bacillus at a dilution of 1 : 1000.

Frost²⁸ has isolated from Washington (D. C.) tap water an organism which he calls *Pseudomonas protea* which agglutinated the blood of typhoid patients at a dilution of 1 : 320.

NON-AGGLUTINATING TYPHOID SERUM.

We have endeavored to explain above why the serum of non-typhoid patients may sometimes cause agglutination of the typhoid bacillus, and have cited numerous instances of this phenomenon, but sometimes the blood of patients with typhoid fever fails to agglutinate the infecting organism, or clumping does not occur until late in the disease.

Stengel and Kneass²⁹ found the Widal reaction negative in 109 out of 2392 cases of typhoid fever.

McFarland³⁰ made daily tests of the blood of 230 soldiers ill with typhoid fever during the Spanish-American War, and was unable to get the reaction in 10 cases. Of 219 cases that were positive, 126 gave agglutination before the eighth day of the disease, 36 did not give the reaction until the second week, 45 were not positive until between the seventeenth and twenty-first day, 8 not until the twenty-fifth day, and 2 as late as the twenty-eighth day of the disease.

Block and Gwynn³¹ found the reaction negative in seven out of 151 cases. In only 26 was the reaction positive before the seventh day of the disease, and in four cases it developed on the twenty-second, twenty-sixth, thirty-fifth and forty-second day, respectively.

A number of such cases have been reported to the laboratory of the Subdepartment of Health, among others a particularly striking one in which the reaction was not positive until the sixty-first day after the patient was convalescent.

Ehrlich has shown that diphtheria toxin on standing for some time loses a part of its toxicity, but its affinity for antitoxin is undiminished. He believes that the toxin is not a simple unit, but is composed of two portions, one a combining or haptophore group, which is able to unite with the corresponding antitoxin, and a specific toxophore group, to which the poisonous action is due and a portion of which is destroyed by exposure to air and light. When the atom of the toxophore group is destroyed, the remaining combining atom of the haptophore group is known as a toxoid.

In explaining the non-agglutinating action of typhoid serum with *B. typhosus* the theory has been advanced that agglutinin, like toxin, may be composed of two parts—a zymophore or combining group and an agglutinin atom. It is supposed that the

agglutinin may degenerate or be destroyed by certain chemicals or heat, and the resultant combining portion of the molecule is known as an "agglutinoid." These agglutinoids may combine with the receptors of the agglutinogens and thereby interfere with or block the agglutination reaction. The presence of agglutinoids has never been demonstrated, and there is doubt as to their actual existence.

A second and more generally accepted theory is that agglutination will not occur in the absence of certain mineral salts, and that the same laws that govern the precipitation of colloids in suspension apply to the agglutination of bacteria. It is probable, therefore, that in a small proportion of cases of typhoid fever the absence of certain salts from the serum inhibit or retard agglutination of the infecting organism.

THE LABORATORY AS AN AID IN DIAGNOSIS.

It is not intended in this article to cast disparagement on the Widal reaction as an aid in the diagnosis of typhoid fever. On the contrary, it is freely admitted that it is one of the most valuable assets in differentiating typhoid from other febrile diseases, and the employment of the test is urged whenever occasion arises. However, the laboratory can only report facts and conditions as they are found, and the laboratory findings should be regarded as an aid only in the diagnosis of a disease. The laboratory has its uses and its limitations, and the physician should regard it as a help in making his diagnoses rather than as a court of last resort. Interpretation of the laboratory report should be guided by the symptom-complex as observed at the bedside, and careful study and examination of the patient should always govern the diagnosis.

We have recently introduced the use of "blood-culture outfits" as still another aid to physicians in the early diagnosis of typhoid and other febrile diseases. These outfits contain the aluminum box and cover-glasses found in our regular typhoid outfits, and besides they contain a tube of bile for collecting blood for the diagnosis of typhoid and paratyphoid fever or for urine and feces of suspected carrier cases. It frequently happens that when the Widal reaction is negative we are able to isolate the infecting organism from the bile tube. This is particularly true in early cases of typhoid fever, and out of 42 positive blood cultures, two were obtained on the second day of the disease, four on the third day, six on the fourth day, and three on the fifth day of the disease. Twenty-two, or 51 per cent., of the cultures were positive during the first week. Besides, other infections are frequently diagnosed by this method, and paratyphoid and pyocyaneus bacilli have been isolated on a number of occasions. It is not intended that the blood-culture method shall replace the ordinary Widal method in the diagnosis of typhoid fever, nor is it claimed that we are always able to isolate the organism from the blood, as it frequently hap-

pens that a positive Widal reaction is obtained while the blood culture is negative; but as an adjunct to the Widal outfit we are sure it will prove invaluable. One important cause often responsible for negative blood cultures is the small quantity of blood collected in the bile tube, and physicians using this method should collect at least 10 to 15 drops of blood in the tube.

As the method not only gives the physician the benefit of the Widal reaction, but also often aids in an earlier diagnosis of typhoid fever, in the detection of carrier cases or in a diagnosis in other than typhoid conditions, it is urged that these combined outfits be used whenever possible.

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Book Review.

LIPPINCOTT'S NEW MEDICAL DICTIONARY. A Vocabulary of the Terms Used in Medicine and the Allied Sciences, with Their Pronunciation, Etymology and Signification, Including Much Collateral Information of a Descriptive and Encyclopedic Character. By Henry W. Cattell, A.M. (Laf.), M.D. (U. of P.), editor of *International Clinics* and Fellow of the College of Physicians of Philadelphia. Freely illustrated with figures in the text. Published by J. B. Lippincott Company, Philadelphia, London and Montreal. Octavo; 1108 pages; flexible leather; thumb indexed. Price \$5 net.

For the price this is one of the best medical dictionaries ever published. In fact, the information contained therein is so profuse that one would not be amiss in designating the work as a medical encyclopedia. It possesses the attractive feature of also being a more or less complete lexicon of those scientific branches allied to medicine, thus facilitating a physician in finding the proper meaning of terms not strictly medical. The latest medical words, together with their proper meaning, have been incorporated in the text. Nothing has been left undone by the publishers or editor in the effort to render this latest addition to the family of medical dictionaries as up to date as possible. The text is profusely illustrated, the print is large and legible, the paper and typographic features excellent. Students, general practitioners and specialists will find this book an infallible guide to the proper meaning of modern medical terminology.

Correspondence.

Editor Maryland Medical Journal:

Dear Sir—I note an unfortunate error in the summary of results of the June (1910) examination published in your September number. In that Nos. 16, 28 and 38, who were refused license, were listed as graduates of the Baltimore Medical College. They are graduates of the Maryland Medical College, located in Baltimore, and should have been so listed.

Yours truly,

J. McP. SCOTT,
Secretary Board Medical Examiners.

MARYLAND MEDICAL JOURNAL

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BALTIMORE, OCTOBER, 1910

THE ONE HUNDRED AND TWELFTH SEMI-ANNUAL MEETING.

THE one hundred and twelfth semi-annual meeting of the Medical and Chirurgical Faculty is now a memory, and, according to those who attended, a more thoroughly enjoyable affair of the kind has never been held. The attendance was large, and the scientific sessions of more than usual merit. All who attended had a good time, and we are sure will never regret the hours spent in Annapolis. Too much praise cannot be given the Committee on Arrangements and the Anne Arundel County Medical Society, the former for the excellence of the program and the latter for the able manner in which they handled the local end of the occasion. Toasting and feasting were the order of the day, and right well did these committees supply the bodily and mental cravings of the hungry visitors. This is nothing new, however, as the physicians of Anne Arundel are noted throughout the State for their hospitality, and everyone hails with delight an announcement that the next meeting is to be held in the Capital. Well did they uphold their reputation on this occasion, for everybody declared this meeting the best ever held.

Part of three days was devoted to the meeting—September 12, 13 and 14. Much business was disposed of, but the chief features were the social and scientific programs. Trips down the bay, luncheons, receptions, dinners and the listening to papers were so crowded into the three days, and the time slipped away so agreeably and pleasantly, that one really regretted when the time came to say good-bye.

The first session was held Monday evening, September 12, 1910,

at 2.30 P. M., and was devoted to short addresses by the Hon. James F. Strong, Mayor of Annapolis, Dr. Thomas H. Brayshaw, president of the Anne Arundel County Medical Society, and Dr. Franklin B. Smith, president of the Medical and Chirurgical Faculty. At 7 P. M. of the same evening dinner was served at Carvel Hall, and at 8.30 P. M. a reception was tendered by the Chamber of Commerce of Annapolis at Boucher's-on-the-Spa to the visitors, who were treated to an old-fashioned Maryland crab supper.

The morning session of Tuesday, September 13, consisted of a symposium on the State Board of Health and scientific papers on subjects of the day. Amongst the papers presented were: "The Food and Drug Act," by Charles Caspari, Jr., Phar.D.; "Some Oesophageal and Bronchoscopic Cases," by Dr. Richard H. Johnston; "Mercurials in the Treatment of Tuberculosis," by Dr. Pearce Kintzing; "A Plea for the Betterment of Health in the Country Districts," by Dr. C. W. G. Rohrer; "Advantages of Decompression in Treatment of Head Injuries," by A. McGlannan, etc. At 8.30 P. M. the president's address was delivered.

Wednesday was devoted to a joint session with the Maryland Psychiatric Society, at which papers were read on subjects relating to the insane. Maryland has assumed a leading position in the care of the insane, and these papers by our foremost alienists were of unusual merit. Dr. Clarence B. Farrar read an article on the "Care of Depressed and Suicidal Patients;" Dr. H. D. Purdum on the "Care of Excited and Violent Patients;" Dr. F. J. Flannery on the "Care of Demented and Untidy Patients;" Dr. F. W. Keating on the "Care of Epileptic Imbeciles;" Dr. J. Clement Clark on the "Care of Epileptic Insane," and Dr. R. P. Winterode on the "Remedial, Economic and Ethical Value of the Employment of Patients as Utilized in State Hospitals." Members of the reception committee were Drs. T. H. Brayshaw, L. B. Henkel, Jr., F. W. Thompson, C. R. Winterson, W. R. Dunton, A. P. Herring, M. L. Price and H. B. Gannt.

We are more than pleased to announce to our readers that most of the papers presented before the society will be reproduced in the pages of the MARYLAND MEDICAL JOURNAL, so that those who were so unfortunate as to be unable to attend will be able to profit to some degree.

Medical Items.

DR. R. MARTIN BRUNS is working energetically for the establishment of a floating hospital for Baltimore. He will deliver a lecture on the subject at the Faculty Library early in October.

DRS. MARY DAYTON ALLEN AND HELEN WATSON, both graduates of the class of 1910, Johns Hopkins Medical School, have been appointed internes of the Johns Hopkins Hospital for the coming year.

THE citizens of Havre de Grace are much interested in the establishment of a hospital in their city. Popular subscriptions are being solicited and a committee of representative citizens is working hard toward this end.

DR. R. C. FRAVEL of Shenandoah county, Virginia, has resigned from Bellevue Hospital, New York, to become associated with Dr. Stuart McGuire at St. Luke's Hospital, Richmond.

DR. FRANCIS E. HARRINGTON has been appointed secretary of the Board of Health of Cumberland, Md.

DR. C. W. G. ROHRER of the State Board of Health paid a visit of inspection to the streams supplying water to Hagerstown, Md.

DR. FRANCIS M. CHISOLM of Washington, D. C., is now occupying his new residence, 1632 Rhode Island avenue N. W. The building has been completely remodeled and converted into an American basement for the accommodation of his offices.

DR. J. MCPHERSON SCOTT, secretary of the Maryland State Board of Medical Examiners and Mayor of Hagerstown, was so unfortunate as to sustain a fractured arm in attempting to stop his automobile quickly to avoid collision with a boy.

DR. PHILIP K. GILMAN, associate professor of surgery at the University of Manila, Philippine Islands, was a recent visitor to the Johns Hopkins Hospital.

THE Tri-County Medical Association, consisting of the medical men of Jefferson, Berkeley and Morgan counties of West Virginia, held its annual meeting at Harper's Ferry, W. Va.

DR. F. W. STEINER has decided to locate permanently in Havre de Grace, Md.

DRS. FRANK C. AINLEY, J. W. ROSENFELD, LAWRENCE SELLING, CAROLINE B. TOWLES AND MILTON C. WINTERNITZ, all of Johns Hopkins

Hospital and Medical School, sailed for Europe September 14 to pursue clinical studies in Germany.

DR. WILLIAM WHITRIDGE WILLIAMS of Colorado Springs, Col., has been visiting at his former home in Baltimore.

DR. J. H. MASON KNOX is visiting in the North, and will return to Baltimore October 1.

DR. N. E. BERRY IGLEHART has reopened his residence, 16 West Preston street, Baltimore.

DR. WILLIAM E. WIEGAND is visiting in Canada.

DRS. J. M. CRAIGHILL AND HIRAM WOODS have returned from Northern trips.

THE State Conference of Charities and Corrections will meet in Frederick, Md., November 17, 18 and 19.

MARRIAGES.

JACOB WHEELER BIRD, M.D., University of Maryland, '07, of Sandy Spring, Md., to Miss Mary McIntire Wilson of Centreville, Md., at Centreville, September 7, 1910.

DAVID I. MACHT, M.D., Johns Hopkins University, Medical Department, '06, of 1518 Madison avenue, Baltimore, to Miss Sarah Adler of Baltimore, September 5, 1910.

WILLIAM H. THEARLE, C. of P. & S., '08, Lieutenant U. S. Medical Corps, to Miss Bertha Mills of Waynesboro, Pa., September 5, 1910.

JOHN WALTER CARTER JONES, M.D., University of South, Medical Department, 1900, of Newport News, Va., to Miss Charlotte Walker Stephenson of Warm Springs, Va., at Warm Springs, August 31, 1910.

H. A. BORN, M.D., to Miss Elizabeth T. Blankner, both of Baltimore, in Baltimore, August 31, 1910.

DEATHS.

JOHN W. DASHIELL, M.D., University of Maryland, '43, at his home in Princess Anne, Md., September 4, 1910, aged 93 years.

MARSHALL J. BROWN, M.D., University of Maryland, '07, of Greensboro, Md., at the New Howard House, Baltimore, September 4, 1910, of acute indigestion, aged 27 years.

J. S. SELLERS, University of Maryland, '93, at his home in Weyer's Cave, Va., September 2, 1910, of abscess of the brain, aged 42 years.

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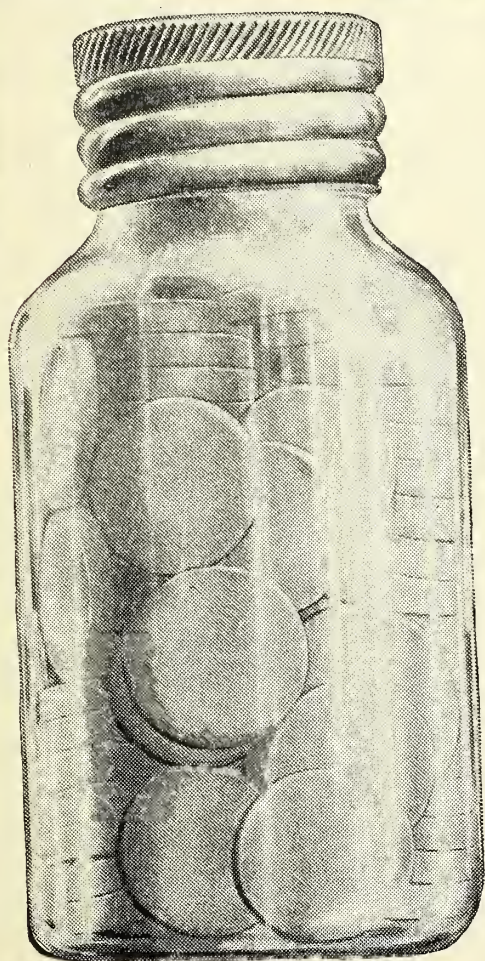
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State Board of Health.

ON THE LABELING OF ICE CREAM.

Baltimore, July 11, 1910.

Marshall Langton Price, M.D., Secretary
State Board of Health,
Baltimore, Md.:

Dear Sir—In reply to your request for my opinion as to the proper form of label to be required of manufacturers and dealers in ice cream under the terms of the Pure Food and Drug law, being Chapter 166 of the Acts of 1910, I beg to advise you that manufacturers and dealers in ice cream are required to label the product made or sold by them, showing the percentage of milk fat contained therein, and if imitation flavoring materials are used, or more than 1 per cent. of gelatin or vegetable gum, the label must also state that fact.

The State Board of Health must enforce the provisions of this act, and is empowered to adopt such rules and regulations in connection therewith as it may deem proper.

The object of this law is to protect the consumer from deception by the seller, but any regulation of a business or avocation under the police power of the State must be reasonable.

In my opinion it would not be a reasonable regulation to require that the exact amount of milk fat contained in any particular package of ice cream should be stated, but to require the seller to state on his product the least or minimum amount of milk fat he guarantees therein is a reasonable requirement, and is proper and necessary under the law. The vendor ought to be compelled to put on his label the words "containing not less than 10 per cent. milk fat," or whatever amount he is willing to guarantee, and the amount ought to be stated in numbers at least one-half inch in height.

The kind of label and how it is to be attached to the product are, manifestly, difficult questions. It would be reasonable, in my opinion, to require the manufacturer selling his product in metal containers surrounded by ice to attach to his outside bucket or tub a substantial shipping tag not less than 5x3 inches, on one side of which should be stated the kind of ice cream and the name and address of the manufacturer, and on the other side thereof should be stamped or printed the date of packing or sale, the content of milk fat, and, if imitation flavoring or more than 1 per cent. of gelatin or vegetable gum is used, it should be stated. The number or numbers stating the milk fat content should be printed, written in ink or indelible pencil or stamped.

Vendors of smaller packages of ice cream put up in paper cartons or other container not surrounded by ice should be compelled to put thereon a label giving the name of the seller, milk fat content and a statement as to imitation flavoring or the use of more than 1 per cent. of gelatin or vegetable gum.

Sellers of small quantities not enclosed and intended for immediate consumption, such as lunch rooms, moving vans, department stores, drug stores, etc., should be required to exhibit in sight of the buyer a conspicuous sign stating plainly the milk fat content. If imitation flavoring or more than 1 per cent. of gelatin or gum is used the sign must state it. In the case of lunch rooms, hotels and other sellers using a bill of fare or menu, the requirements

Open Letter No. 3

Doctor :—

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All our preparations are carried in stock by the Drug Trade everywhere, but if you wish samples for further trial, we will be pleased to send them on request.

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BALTIMORE, MD.

as above could be printed or stamped thereon, or the seller should exhibit to the consumer, on demand, the label of the manufacturer.

Yours very truly,

WM. PINKNEY WHYTE, JR.,
General Counsel.

Editorial Comment.

INTESTINAL INFECTIONS IN INFANTS AND CHILDREN.

Denver Medical Times and Utah Medical Journal.

DR. JOSEPH E. WINTERS, professor of the diseases of children in Cornell University Medical College, has definite ideas upon the philosophy of feeding in intestinal infections, and a literary style which is altogether his own. Prevention is best accomplished, he says, by having the milk cooled immediately to 40 degrees F., and kept at this temperature, at which bacteria do not develop. The best bowel-cleansing agent in acute diarrhea, according to Professor Winters, is ice-cold castor oil, a teaspoonful for a child about a year old, tablespoonful for a child one and a half to two years old; then the intestines should have a rest from food for 36 to 72 hours.

Very hot water, three or four drops every 10 minutes on tongue from dropper, is "magical" in checking vomiting. When there are dry or furred tongue, tumid abdomen, restlessness, fast pulse or fever, stimulate secretions with one-quarter gr. rhubarb and 10 grs. sodium bicarbonate in a teaspoonful of water every two hours. When secretions are restored, feeding should be resumed cautiously.

For children under six months, take top half ounce from each of two quart bottles of milk 16 hours after milking (or 6 hours after city delivery), mix one teaspoonful of this cream with one ounce filtered water and two teaspoonfuls lime water (no milk sugar when diarrhea), heat to feeding temperature, and give one ounce every four hours, giving at the midway interval one or two ounces hot or cold water. At the end of two days, if the child is doing well, give one ounce food every three hours (discontinuing alternating water supply); after 24 hours, one and a half ounces; after another 24 hours, proteid strength is gradually increased by using more cream from the bottles.

Children from 6 to 12 months of age with diarrhea are fed similarly (at first two teaspoonfuls cream, one and a half ounces water and three teaspoonfuls lime water), but more water is allowed as a drink, just after feeding. In children a year or more old recovery can confidently be expected by restriction of the diet to thoroughly cooked starchy foods (arrowroot, farina, barley, granum, cream of wheat, hominy, rice) served hot with a little butter and salt—no cream, milk or sugar. Absolute quiet is essential in treatment of diarrhea. Pasteurization creates false security. Judicious irrigation may be very beneficial, but mucus persists as long as irrigations are continued.

Subacute or chronic cases of diarrhea in infants are best dieted (says Winters) on sweetened condensed milk (for a baby of three months, one teaspoonful in every 24 teaspoonfuls boiling water, using at first one ounce for each feeding every four hours), alter-

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TO DO THE DIGESTING
FOR THE STOMACH,
WE SHOULD PROPERLY
FEED THE DIGESTIVE
CELLS in order
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THAN HIS STOMACH.

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nating with one ounce hot water and two teaspoonfuls lime water, and gradually increasing strength of mixture, but never above 1 to 16, three ounces with one and a half ounces lime water every three hours. After a cure has been achieved, however, the condensed milk must be gradually dropped (lest rickets or scurvy supervene), by substituting more and more cream. Subacute and chronic diarrhea in the second year is usually quickly controlled by an exclusive cereal (barley gruel) diet.

OPHTHALMIC MIGRAINE AND FRONTAL SINUS DISEASE.

Medical Record.

WHILE sick headache, with or without such ophthalmic symptoms as scintillating scotoma and narrowing of the visual field, is, as a rule, an essentially neuropathic manifestation, cases are undoubtedly accumulating in which the eye manifestations may be shown to be due to organic disease in either the nasal fossæ or the sinuses. This is especially apparent when a condition like ophthalmic migraine, which has little tendency to spontaneous recovery, yields permanently to measures directed to the intranasal condition. Oertel of Düsseldorf reports in *Berliner klinische Wochenschrift* of June 13 an interesting case in which a chronic catarrhal inflammation of the right frontal sinus caused increasingly repeated attacks of ophthalmic migraine. In this particular case there were no scotomata, nor was there any retraction of the visual field; but there was marked asthenopia at the height of the migrainous attack. Various explanations have been advanced to account for such cases, and most of these deal with a reflex mechanism, although opinions differ as to how this becomes operative. Oertel inclines to Zarrikow's theory that accumulated secretions in the frontal sinus, or edematous saturation of the mucosa of the middle turbinate, or both conjoined, comprise the nerve endings, and thus determine the migrainous attack as a purely reflex phenomenon. In this type of cases drainage of the frontal sinus brings about a prompt recovery from the migraine. Both ophthalmologists and rhinologists seem inclined to accuse empyema rather than chronic catarrhal inflammation of the sinus, but experience shows that one condition may readily pass into the other and that nasal ophthalmic migraine need not necessarily suggest an empyema.

HEXAMETHYLENAMIN.

Denver Medical Times and Utah Medical Journal.

THIS remedy, introduced by Merck as urotropin (because of its clearing effect upon purulent urine), is a brilliant example of the clinical value of synthetic products. It is a compound of ammonia and formaldehyd, liberating the latter in acid solutions; e. g., the urine. It is readily soluble in both water and alcohol, and is not liable to disturb the alimentary tract, but has caused (Beardsley) hematuria, dysuria, and, less frequently, headache, backache, tinnitus, scarlatiniform rash, edema of face and albuminuria. A safe and effective dose is five grains four times a day.

For about a decade hexamethylenamin has been employed, with generally good results, as a urinary antiseptic, being particularly serviceable in colon and typhoid infections. As a prophylactic

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against posttyphoidal infection of the kidneys and gall bladder it has appeared to be efficacious, and some observers have claimed for it a similar preventive action towards postscarlatinal nephritis. In urinary infections by the gonococcus or tubercle bacillus its efficacy is very doubtful.

Two years ago Crowe (*Johns Hopkins Hospital Bulletin*) made some animal and human experiments which established definitely the fact that hexamethylenamin in rather large doses (75 grains or more daily) is an excellent agent for sterilizing bile in the gall bladder, with resulting clinical improvements in patients with acute infection of this organ. As in urinary cases the remedy must be continued for some time, or the organisms will multiply again.

Crowe likewise showed the constant early appearance of hexamethylenamin in the cerebrospinal fluid, even after quite small doses by the mouth, and the antiseptic action thereof upon bacteria introduced subdurally. He therefore advises (as heretofore noted in the *Denver Medical Times*) the prompt administration of this drug in all clinical cases in which meningitis threatens (for instance, erysipelas with cerebral symptoms) or has begun.

Some conditions in which hexamethylenamin has been lately tried with success (J. A. M. A., July 9, 1910) are acute gonorrheal arthritis (following aspiration of pus) and middle ear infection. Dr. W. N. Barton, at the annual meeting of the American Therapeutic Society, reported a number of cases of purulent otitis media rapidly cured under the administration of this remedy. Altogether, it appears that hexamethylenamin is our most reliable internal antiseptic.

LEAD POISONING AND LUNG AFFECTIONS FROM WORKING IN POTTERIES.

Medical Record.

Two reports have been issued in Great Britain dealing with the dangers to health attending those who work in pottery manufactories. The menace to health from this kind of employment is due to the use of lead compounds in making pottery, rendering the workers liable to lead poisoning, and to the injury to health arising from the inhalation of dust. The inhalation of dust of flint and clay is known as potter's rot. Dr. Russell reported that no less than 52 per cent. of potters over 50 showed signs of lung disease, and, according to Dr. Shafflebotham, bronchitis caused 44 times more deaths among pottery workers than among the general population. The liability to and the contraction of plumbism is a far more serious matter among pottery workers than are the dust-caused diseases. The pottery processes in which lead is used employ in Great Britain about 7000 workers, and of these 100 or thereabouts are attacked by lead poisoning every year. The evil, however, is much larger than the figures of cases indicate. Many cases of lead poisoning are concealed. In addition to the actual tabulated cases, the evidence tends to show that the general health of a considerable number of workers is impaired. Many of the pottery workers are girls and married women, and a grave consideration of the question is the effect of lead poisoning upon maternity. Thirty-one out of 121 mothers who were lead workers previous to marriage had miscarriages, and 21 out of 70 mothers who worked at lead processes after marriage were subject to miscarriage. Lead poisoning is a very insidious form of poisoning, and

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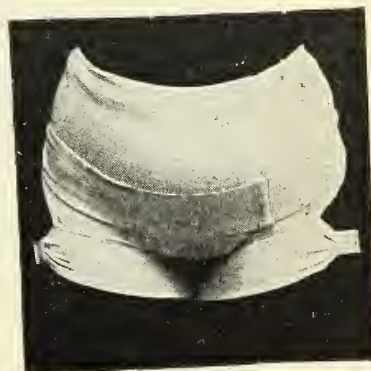
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MAN'S BELT—FRONT VIEW

in the large majority of cases exerts an injurious influence upon the worker. Of course, a tired or under-nourished worker is more prone to be poisoned than a healthy individual, and for this reason it is essential that those who work in lead pottery manufactories should be as well nourished as possible. The British report recommends that employers should supply their employes, especially the delicate ones and the girls and women, with milk or milk and cocoa before they commence work and at intervals after. But Miss Gertrude Tuckwell, the only woman inspector who signed the report, makes a more sensible suggestion—that taking into consideration the fact that pottery can be made without lead glazing, the use of lead should be prohibited in its manufacture. A British labor paper, commenting on the matter, makes the humane recommendation that lead-glazed pottery should be boycotted. It is now beginning to be widely recognized and appreciated that human life and health are of more value than the amassing of riches, and the time is not far distant when this wise principle will be acted on.

THE PERMANENT SLOW PULSE.

Medical Record.

P. ROSTAIGNE of Paris recently discussed the permanent slow pulse in an article published in the *Medical Press and Circular* July 20. Adams, in 1827, was the first to describe the pathological permanent slow pulse, and the question has come to the front again recently. As a rule, the pulse rate in these cases is from 30 to 40 pulsations a minute, but it is sometimes even slower than this. In a general way examination of the heart does not reveal anything abnormal in respect of the orifices, but Stokes, who, together with Adams, described the pathological condition known as Stokes-Adams disease, called attention to a peculiarity of the heart that is sometimes met with. Between the audible heart contractions a dull, muffled sound is heard, which he regarded as an abortive systole represented only by auricular contraction. It follows that the heart sometimes splits up the systole into two parts, a superior auricular, and an inferior ventricular, which occasionally misses fire. Rostaigne shows that Stokes' observations are borne out by the present conception of the pathogenesis of permanent slow pulse. Permanent slow pulse is an affection that runs a long course. As a rule it lasts for several years, but the prognosis is always grave, indeed fatal. Since Charcot's time and up to a recent date the Stokes-Adams syndrome has been regarded as a consequence of disturbance of the circulation in the medulla, that is to say, the central nervous system was credited with a preponderating role in regulating the heart beat. In view, however, of recent physiological and anatomical researches, the myogenic theory has taken the place of the neurogenic, the conception of cardiac automatism is now generally admitted, and little or no importance is attached to the medulla as the seat of origin of the disturbance of cardiac rhythm. The symptoms observed in the course of permanent slow pulse are now referred to a lesion of His's bundle, and what is more important is the fact that syphilitic lesions have been found at the root of the mischief. As Rostaigne remarks, this is quite a novel conception and justifies our anticipating recovery in many of these cases of permanent slow pulse as a result of mercurial treatment.



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Whole No. 1110

MERCURIALS IN THE TREATMENT OF TUBERCULOSIS.*

By Pearce Kintzing, B. Sc., M.D.,

Professor Principles and Practice of Medicine, Maryland Medical College; Physician to the Franklin Square Hospital, etc.

THE late Professor Samuel Gross, who died in 1884, and since whose day pathology has made many strides, used to say that the three generations of tuberculosis were: First generation, syphilis; second, scrofula; third, consumption. Further, he taught that mercury was almost as beneficial in the cases that he denominated scrofula as it was in the specific disease. This is not bad therapeutics even today, nor was his pathology bad, when we consider that it is but twenty years since his second and third generations have completely coalesced, and that Kovacs of Budapest, in 1894, wrote his treatise on the relationship of scrofula to tuberculosis.

Some thirty years ago Horatio Wood¹ taught that bichloride of mercury in small doses was a tonic and blood regenerator of especial value in wasting diseases. Many observers have confirmed this conclusion. About the same time DaCosta taught that mercury internally administered in minute doses was of undoubted value in phthisis. The salts he recommended were the bichloride, the proto- and biniodide. Imbued with this idea by his teachings, I began, while resident physician at a Philadelphia hospital, to use these salts as routine remedies in all cases of tuberculosis in the out-patient department. While connected with the old Baltimore Polyclinic I administered mercury to a multitude of tubercular patients, and, with intermissions, I have continued the practice ever since.

Contact with Sommerbrodt,² the high apostle of creosote, caused me to desist somewhat from the practice of giving mercury to all patients of this class, but not to abandon it.

In 1888 and the years following, Martel of Glauchau³ published a series of articles advocating the protracted use of calomel in all forms of scrofula and tuberculosis, especially in early tuberculosis.

*Read at the semi-annual meeting, Medical and Chirurgical Faculty, Annapolis, Md., September 13, 1910.

He presented his views at the second International Medical Congress in 1900 (*Wiener Med. Wochenschr.*, 1900, II, et seq.), and published a series of confirmatory articles in 1903 (*Wiener Med. Wochenschr.*, 1903, I-X.) Meanwhile, a considerable number of Austrian, German and French investigators expressed accord with the measures advocated by Martel. Among these I mention only a few well-known names, Professor Kohler,⁴ Thierry,⁵ Todt,⁶ Majewski,⁷ Sprengle⁸ and Edelheit⁹. Martel advised calomel by the mouth, insufflation, inunction in the form of soap, whereas Thierry, Todt and Edelheit commended both calomel and iodoform-calomel.

Treatment by injection, deep or subcutaneous, of various medicaments, has always seemed rational, has appealed to many workers, and has been used not only in local, but widely in general tuberculosis. It may be interesting to recount a few of the remedies that have been advocated, from time to time, as curative by injection, and it is well to bear in mind that here, as elsewhere, multiplicity is self-condemnatory. No reference is here made to the various serums that have arisen since the days of Koch and his school. They include iodine, mercury, arsenic and its compounds, permanganate of potash, sodium cacodylate, iodoform and various combinations thereof, silver nitrate, antifebrin, formaldehyde, oil of garlic, oil of cinnamon and salts thereof, but the list could be prolonged almost indefinitely.

In 1886 I saw William Pepper inject solutions of bichloride of mercury into the lungs of patients with pulmonary cavities.

A. Costin¹⁰ of Bucharest in 1891 advised interstitial injection of guaiacol-iodoform, which was a modification of the iodoform treatment recommended by Verneuil and others. The journals of 1891 and the year following are so full of reports of the guaiacol treatment that in 1894 Rubinstein of Hamburg wrote a history of it.

In 1892 I. Combray¹¹ advised the interstitial injection of chloride of zinc, and in the same year Nourry¹² affirmed that immunity from tuberculosis was secured by injection of testicular fluid.

Following J. Sommerbrodt's articles upon the value of creosote, Cheron¹³ of Paris recommends enema of this drug and reports good results.

In 1893 Frey¹⁴ advised subcutaneous injections of creosote in the various forms of general tuberculosis, while Pfeilsticker (same year) advocated iodine emulsions, and J. T. Mays approves of injection of silver nitrate.

In 1894 we find that F. Grippo¹⁵ of Naples cures pulmonary consumption by hypodermic injections of aristol, while Landerer¹⁶ advocates the injection of zimmtsäure, and many others concur in its wonderful effect. J. Sendziac¹⁷ warmly recommends injections of thiosinamin in pulmonary and in laryngeal tuberculosis; Kanstel's treatise on the Treatment of Tuberculosis with Sodium Cinnamylate was published in St. Petersburg in 1895, but the his-

tory of this cinnamon salt treatment—for it is now history—is still fresh in the minds of most of us.

In this same year we find Berlioz advising formol, and hear Cavazzani asserting that garlic and its oil are both curative and prophylactic, and, as usual, he is confirmed by others, but they fail to explain why garlicky Naples is similarly tuberculosis infected.

In the same year Tóvölgyi, Budapest, advocates injections of hetol, and L. Revilliod,¹⁸ Geneva, advises subcutaneous injections of sodium chloride. Indeed, in 1898, Englemann still finds the saline treatment effective.

In 1907 A. Calabrese¹⁹ writes on injections of iodine, Reischacher²⁰ uses thymol camphré; Vernier, in his treatise, published in Paris in 1908, injects sulphuric ether, and Francis²¹ recommends formic acid and its salts; but the whole subject of the hypodermic and injection treatment of tuberculosis is reviewed by Backer and Charlier²² in 1909, to which series of articles those interested are referred.

In recent years these methods have been supplanted largely by various modifications of Koch's tuberculin, and many, if not most, of the drugs named have fallen into deserved desuetude. Omitting those still used for local tuberculosis, two general remedies have survived—creosote and mercury. In 1895 Conway²³ writes on "Creosote in large doses as a specific in tuberculosis," and in June, 1908, B. L. Wright,²⁴ surgeon, United States Navy, enthusiastically advocated mercury as almost a specific in all forms of pulmonary and general tuberculosis, claiming cures even in advanced cases with cavities and after hemorrhages. He advised intramuscular injections of succinimid of mercury. In a more recent article²⁵ he has greatly modified both his views and his methods. He first advocated $\frac{1}{4}$, $\frac{1}{8}$ grain doses; he now uses 1-15 grain every other day until therapeutic signs show themselves, when the treatment is discontinued two weeks, then thirty doses are administered; rest, repeat for a year or longer. He advises alternation in certain cases with arsenious acid and ferrous citrate (gr. $\frac{1}{3}$), the treatment to continue as long as symptoms show themselves.

He rightly observes that, as in syphilis, arsenic and mercury sometimes secure results where mercury alone fails. Wright claims good results irrespective of the organs involved. During 1908 83 patients were treated; 89 per cent. improved, 7 cases cured. Of 24 cases of ulceration of the larynx, 20 were cured, 4 died in two months. General glandular tuberculosis, 4 cases, 3 suppurating—all were cured; one case of tubercular epididymitis cured.

Wright's work attracted widespread attention, and certain manufacturing houses exploited the salt.

I began using his method in my clinic shortly after the appearance of his first report, and by myself and others, whose reports are open to me, the remedy has now been tried in 104 cases. By reason of the fact that these patients were not under full control,

and owing to the intense pain following the injections in the majority of instances, no matter how carefully administered, some of the number received only a few injections, but 50 patients were carefully observed. Two died within two months, four within six months, and six within a year of beginning treatment, one died after sixteen months of systematic treatment by myself; total 13, or 26 per cent. It is but fair to presume that an equal number of the unfavorable cases included in the above, and of those that have recently come under treatment, will die; hence I estimate our total mortality at from 55 to 60 per cent., which, considering that most of the cases were dispensary patients, that over 50 per cent. of these were negroes, in which race the disease is unusually fatal, and that the surroundings were generally unhygienic and the food bad, is somewhat better than the average. Many of these were advanced cases of pulmonary tuberculosis; all were tested by the Morro or Von Pirquet reaction; generally, they manifested distinct physical signs or showed bacilli in the sputum or feces, and I will here remark, parenthetically, that sometimes bacilli may be found in the latter when not demonstrable in the former.

In spite of these seemingly unfavorable reports, nevertheless, I believe that mercury has a distinct, though limited, place in the therapeutics of tuberculosis. As stated, I have given its salts, internally, for years to a great many patients, and one thing that leads me to the positive deduction that mercury is in some way antagonistic to the disease is the great difficulty experienced in salivating a tuberculous subject. Bearing in mind on the one hand the possibility of concurrent syphilitic infection, the frequency of which is pointed out by Grippo (*loc. cit.*), and, on the other hand, the frequent sore mouths, tender gums and excessive secretion encountered in patients, as general manifestations, it is extraordinary what quantities of calomel or bichloride may be administered without producing anything save a slight and easily controlled diarrhea.

In our dispensary cases it was not that the good died young, but that the favorable cases—those fifty or more that would have increased our good results, from the very nature of the case—escaped us, if not the ravages of the disease.

I see little advantage in the injection method over the administration of the salts by the mouth, nor do I find that the succinimid is in any wise superior to the more soluble and seemingly less irritating salts, the biniodide and the bichloride. Muscular injections of the first are very generally painful, and in some patients—those that have lost their fat—prohibitively so. The method is far more troublesome and less easily managed.

I agree with Wright that laryngeal cases are most apt to be benefited; on the other hand, I find that advanced cases, generally, those that have had hemorrhage and cavity cases, are probably

made worse; but in incipient cases, as Martel believes, so I conclude that mercury in small doses is beneficial.

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THE ESSENTIALS OF MATERIA MEDICA AND THERAPEUTICS FOR NURSES. By John Foote, M.D., Assistant Professor of Therapeutics and Material Medica, Georgetown University School of Medicine; Instructor in Materia Medica and Therapeutics, Providence Hospital Training School for Nurses. Cloth bound. Philadelphia and London: J. B. Lippincott Company. 1910.

The author is to be congratulated upon the creation of a materia medica and therapeutics ideally suited to the needs of nurses. Those drugs in constant use are thoroughly considered as regards their nature, physiological action, dosage, preparations, toxicology, therapeutic uses and administration. There is also included a list of the commonly used remedies, together with their preparations and doses. A very attractive feature is the definition of the terms commonly found in literature on materia medica and therapeutics. All in all, the book will be found eminently satisfactory, and answers admirably the purpose of those to whom it is addressed.

A PLAN FOR THE PROPHYLAXIS OF MENTAL DISORDERS AND THE AFTER-CARE OF CONVALESCENT PATIENTS BY ORGANIZED SOCIAL SERVICE.*

By Arthur P. Herring, M.D.

Secretary of the Maryland Lunacy Commission.

THE question of affording proper care for patients discharged from hospitals for the insane is by no means a new one. The best and most satisfactory method of administering this aid has not yet been entirely decided, and it is for the discussion of this question that this paper is presented.

In 1829 Lindpainter, director of the asylum at Eberbach, organized the first after-care society. Within half a century the guardianship of the convalescent insane has made wonderful progress. Guardian societies and after-care committees are in successful operation in England, France, Germany, Japan and several other countries. The beneficent influence these societies have upon the treatment of the insane has long since passed the experimental stage, as the facts speak for themselves, in the help which has been extended to numbers of the insane, who would have encountered appalling difficulties and returned beyond a doubt to the asylum, there to finish their existence, leaving behind them a family in want and sorrow, had it not been for the relief and encouragement offered by the after-care societies.

Strange as it may seem, this work has been in active co-operation for over 80 years on the Continent, yet it was not until four years ago that a permanent society was organized in this country. Through the persistent efforts of Miss Louise Schuyler and the active co-operation of the State Lunacy Commission of New York, the first after-care committee was organized in Albany. As a result of this meeting the State Charities Aid Association of New York appointed a subcommittee on prevention and after-care, which has been in active and successful operation since 1906. This committee is now firmly established and doing splendid work.

The first reference to after-care in this country was made by Dr. P. M. Wise in a paper on "Hopeful Recoveries," read before the American Medico-Psychological Association in 1893.

In June, 1894, the subject was presented to the American Neurological Association by Dr. Henry R. Stedman, and a committee, consisting of Dr. C. L. Dana, Dr. T. K. Dercum and Dr. H. R. Stedman, was appointed to investigate and report upon some feasible plan for the aid and supervision of discharged pauper insane patients who are recovered or improved.

It will be of interest to the members of the Maryland Psychiatric Society to recall that the first real impetus was given the

*Read before the semi-annual meeting of the Medical and Chirurgical Faculty of Maryland, Annapolis, September 14, 1910.

after-care movement in America in 1897 at the annual meeting of the American Medico-Psychological Association held in Baltimore. Dr. Henry M. Hurd presided at this meeting when the subject of after-care was being discussed by Drs. Dewey, C. G. Hill and others. As a result of this meeting the following resolution was adopted:

"Resolved, That it is the sense of the American Medico-Psychological Association that the after-care of the insane is worthy of earnest endeavor, and that the association requests the president to appoint a committee to co-operate with a like committee of the American Neurological Association in the furtherance of this object, and specially asks this committee to present the subject at the national conference at its meeting in Toronto the present year."

During the past 13 years after-care has been the topic of numerous papers read before the National Conference of Charities and Correction and various National and State medical associations, but no real organized effort was made until 1906, when the first committee was organized in New York.

The present interest in the after-care of persons who have been mentally ill and have recovered is one phase of a new attitude on the part of the community toward all kinds of institutional relief. Within the last few years there seems to be a general awakening to the fact that we should look more to the life history of the patient, and that residence in an institution is but one incident in the treatment that the community as a whole should give to those of its members who need assistance.

The proper environment for patients recovering from general diseases has long been recognized as of prime importance. It is self-evident that convalescence from insanity, as much as from any severe disease, is difficult and needs to be promoted.

If, therefore, the value of convalescent homes is recognized in connection with our general hospitals, it certainly should be for our insane hospitals and for the increasing numbers who, under modern and enlightened methods of treatment, have every opportunity to recover their mental health and vigor, provided they have the proper surroundings during their convalescence.

Insanity is a disease of the brain, and the institution which is to receive these invalids must be a hospital, not simply a retreat for protecting the insane against themselves and against society. In well-equipped hospitals for the insane every modern therapeutic means is used in the treatment of their mental diseases, and in many cases with very gratifying results.

People still look with too much suspicion upon those who are suffering from mental disease, and even upon those who leave the asylum thoroughly cured. They are kept at a distance with a certain mistrust, and the harsh experiences which often await those who have the good fortune to leave the asylum are very soon the cause of a relapse, many times more difficult to treat than the first attack.

These prejudices must be opposed not only in the immediate surroundings of those who have been insane, but also in the case of those persons whose mental faculties are still suffering. The fresh cares, the grief, the wretchedness; the idea that his disorder, fresh or cured, is to bar the way to the resumption of his previous position, drive him to distraction and despair. In opposing these prejudices, by helping the insane and their families, love and sympathy for the most unhappy and most abandoned creatures are aroused among the people. Thoughtful people will be bettered by it and the instinct of benevolence will be awakened and result in much good. People will cease to talk of madmen and "cracked brains," and will speak of the invalid and his sufferings. The despair that existed will give place to hope, depressed spirits will rebound and wretchedness will be relieved. It is here that the

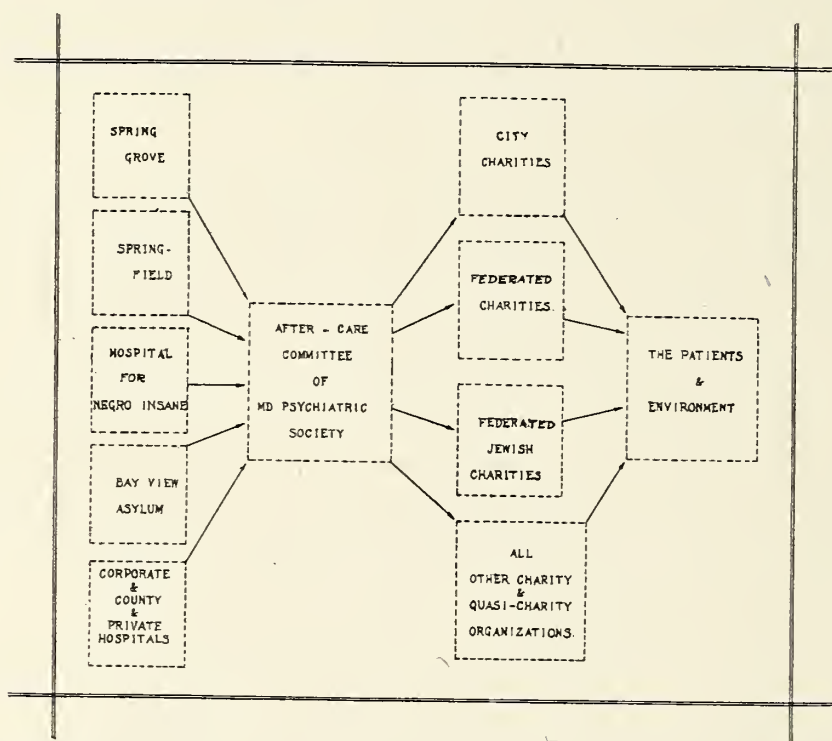


DIAGRAM OF PLAN FOR AFTER-CARE OF THE INSANE.

The hospitals report direct to the After-Care Committee. This Committee refers patients to the proper Charity Organization. The Charity Organization directs its efforts to the patient and his home surroundings.

after-care societies can render their best services, and in doing so they will have secured the greatest results.

It is the duty of the after-care committee to combat these prejudices and overcome popular fallacies regarding insanity. It is also of importance that the people learn to take an interest in the life of the hospital and in the treatment of the patients confined therein. This can be obtained only with the constant co-operation of persons of broad ideas, whose devotion will extend itself even to the depiction in lectures of the suffering and worry engendered by mental diseases, the hope that may spring from an early and rational treatment, and the conditions which may contribute to recovery and prevent a recurrence.

The advantage to be derived from the occupation of patients has been presented in a very convincing manner by the previous speaker, and needs no further argument to make us realize the importance of work and play in the treatment of mental diseases.

Prevention is the keynote of modern medicine, and nowhere is this more true than in the study and treatment of mental diseases. The principal exogenous factors in the etiology of insanity, syphilis and alcohol are both avoidable, and their effect upon the nervous system should be presented to the public mind in no uncertain terms.

In the prophylaxis of mental disorders there are two important questions to consider. The first is to make the most of the recoveries and to prevent as far as possible relapses, and the second is to prevent or abort the initial attack. In the first instance, the efforts of the after-care committee will play an important part, and in the second instance the duty of referring patients early to hospitals for treatment devolves upon the general practitioner and an enlightened public. The hospital should be the first, not the last resort. There are certain forms of insanity, if taken early and properly treated, are recoverable, while in the chronic forms the patient and the relatives can be saved a great deal of worry and discomfort by prompt care and attention. It is a matter of importance that the public should understand the causes of mental degeneration. In struggling against them posterity is protected.

Dr. Barker in a recent paper on "The Prevention of Mental Deterioration and Degeneracy, etc.," states that "society must be brought to the point where it realizes that it is its duty to protect itself against the propagation of a degenerate stock. Only after it has been brought to its senses and shown that the criminal type will often reproduce the criminal, and that inebriates, epileptics, the insane and the feeble-minded, when they become parents, are much more likely than are healthy people to have children with insane tendency, with alcoholic tendency, with epileptic tendency or with other degenerate tendency, can much progress be made."

It is also important that society, and more especially the members of the medical profession, be capable of meeting these different factors of degeneration.

Those children who are backward in their education should be guarded and intrusted to special schools. If experience shows the impossibility of educating them normally, or that they are affected by an incurable or transmissible nervous disease, they must be intrusted permanently to a special asylum. If the last precaution is not taken, they must at least be dissuaded from marriage.

The prophylaxis of mental diseases reaches into every avenue of medicine. For that reason there should be a closer bond of union between the physicians in the hospitals for the insane and the members of the medical profession. It is the custom in some

hospitals to invite the family physician to attend the staff meetings at which the patients in which they are interested are up for discussion. This is a splendid way to gain the confidence of the physician and to enlist his co-operation in the study of the patients, as well as to reassure the family that everything possible is being done to cure or relieve the case.

The good accomplished by such an organization as the Maryland Psychiatric Society is of inestimable value in promulgating a knowledge of mental diseases to the profession at large, and should result in stimulating increased interest in the treatment of those mentally afflicted.

Every effort which serves for a closer mutual understanding and co-operation between State hospital physicians and general practitioners should be encouraged and extended, as it has an important bearing on the prevention and treatment of mental diseases.

"The deep-rooted prejudice against the hospital for the insane dies hard, but we hope and believe the time is coming when the person mentally unwell will turn to the institution as freely for help as he now does to the general hospital for treatment of his physical diseases. When that shall occur, and it is recognized that insanity is a disease, and not a disgrace, then the medical profession will have achieved another great triumph for humanity." (Mabon.)

If we are to derive any benefit from the after-care movement and make any progress in the prophylaxis of insanity, the co-operation of the hospital physicians is of first importance. Dr. Adolf Meyer emphasizes this in his paper on "The Problem of After-Care and Organization of Societies for the Prophylaxis of Mental Disorders." He says:

"I am firmly of the opinion that after-care can only thrive when the policy is charity in its broadest sense, that expressed by the term *Gemeinnuetzigkeit*, i. e., promotion of general (public) welfare. For a successful movement it is very necessary that there should be a harmonious co-operation between all the elements concerned, and that everything should be done to help the hospital physicians who are most intimately confronted with the great problem. To make their work more efficient and to allow it to take a more possible and more profitable shape must be one of the first steps of the movement."

The after-care movement, briefly stated, is to make provisions for cured or convalescent patients without resources or friends, who cannot or should not longer remain in the institutions and are yet not in condition to take up or are prevented by poverty or other limitations from taking up any work which will give them support. It is for the purpose of restoring cured insane persons who are needy *to the world and its work*, and thus promoting independence and preventing relapses that after-care effort is made. This is a work of which there is a crying need, especially in all the larger

centers of population. It seems useless to those who have studied the problem of after-care to seek to have it assumed by the State, which has more than it can do in providing for the positively insane in institutions, and it is believed that this problem will work itself out by the formation of societies through private benevolence, which eventually may indeed come to be supplemented by the State. If interest be enlisted and information disseminated, this subject will more and more come to be better understood and practical benefit will result, as indications of private interest and support for after-care are already in evidence in several of our larger cities.

Dr. William Mabon, superintendent of the Manhattan State Hospital, has had practical experience in the work of the after-care committee and was one of the pioneers in organizing the work in New York. He says:

"I consider this work of after-care of vast importance from the economic, the social and the humanitarian point of view, as well as that of superintendent. It fills a need we have felt for years and for which there was no adequate provision before the after-care committee was appointed."

It is a well-known fact that if we are to consider the benefit which the hospitals bestow upon patients; if we are to make permanent, or as permanent as we can, the improvement they secure, we must see to it that the patients are subsequently adjusted to the community, reinstated in a healthy environment in such a fashion that the causes which produced their insanity are not immediately operating in full force again.

The need of after-care work has been so firmly established and its practical application in New York so definitely demonstrated that we in Maryland should no longer hesitate to organize such a committee. In looking over the hospital reports from various States the suggestion to organize after-care societies is frequently seen, and I am sure it is only a question of a short time when the work will be established in nearly every State.

Massachusetts has for some years successfully carried on the boarding-out system or family care of certain selected cases. This is slightly different from the after-care movement, but both are closely related.

The Connecticut Society for Mental Hygiene, recently organized through the efforts of Mr. C. W. Beers, the executive secretary, promises to be the means of doing a splendid work among the insane of that State, and through the National Committee of Mental Hygiene prominent men throughout the country have been enlisted in the movement. The chief objects of this society are for the protection of the mental health of the public at large and to help raise the standards of care for those actually ill or threatened with mental disorder; also for the purpose of assisting those who, without help of some kind at the time of their discharge, might find the struggle for existence so severe as to cause a relapse, often

necessitating recommitment. The progress of this movement will be watched with a great deal of interest, and we hope will be eminently successful.

At the fifth meeting of the Maryland Psychiatric Society a committee was appointed to devise some plan to begin after-care work in this State. The members of this committee are Dr. J. C. Clark, Dr. J. P. Wade, Dr. R. P. Winterode, Dr. C. B. Farrar, Dr. A. P. Herring and Mr. N. G. Grasty. Several meetings have been held and the following plan adopted, and is presented for your consideration.

THE PLAN.

When the superintendent of the hospital decides that the patient has sufficiently recovered to be paroled or discharged, he will notify the after-care committee, usually 10 days or two weeks before the patient is to leave the hospital.

The committee will then take the case under advisement and determine the best method to pursue for each individual case, keeping in close touch with the various relief organizations in the city.

The investigation of the patient's home surroundings, obtaining employment or giving material assistance will all rest largely with the various charities.

During the time the patients are under the observation of the committee they will be requested to report at frequent intervals to some member of the committee at a central office. For the present the office of the Lunacy Commission is being used. If for any reason it becomes necessary to return the patient to the hospital, it will be the duty of the committee to see that the patient is properly cared for.

The committee will also form the nucleus of a State-wide society, which will gradually develop as the work progresses and extend assistance to county as well as city patients.

When a patient leaves the hospital he will be given a card having printed on the obverse the following:

THE AFTER-CARE COMMITTEE

OF THE

MARYLAND PSYCHIATRIC SOCIETY,

330 North Charles Street,

Room 407.

Mondays and Thursdays, 3 P. M.

Name.....
Address.....
Hospital.....
Date.....

And on the reverse:

THE OBJECTS OF THE COMMITTEE.

1. To offer the convalescent patients, discharged or paroled from State hospitals, practical advice and material assistance, when necessary, to enable them to be self-supporting and return them to the community as wage-earners, and to prevent as far as possible a recurrence of their mental illness.
2. To disseminate information regarding mental diseases and to combat the erroneous idea, so long prevalent, that to be insane reflects disgrace upon the patient or family.
3. To do and effectuate everything possible to improve and elevate the standard of care for the mentally afflicted in Maryland.

The preceding diagram will illustrate the general scope of the work of the after-care committee.

This plan is presented for your consideration, and I hope will elicit some interest and be freely discussed, as we realize that it is by no means complete.

DISCUSSION OF DR. HERRING'S PAPER.

AFTER-CARE OF THE INSANE.

Discussed by J. W. Magruder, general secretary Federated Charities, Baltimore, at the Maryland Psychiatric Society, Annapolis, September 14, 1910:

In continuing the discussion of the after-care of the insane, as proposed by Dr. Herring, it must be understood that I have had no opportunity as yet to submit the proposition to the board of managers of the Federated Charities, and therefore am not speaking officially for them.

It is not a new proposition, however, that is before us. Every social worker who has been watching the development of the treatment of the insane has known that the time is at hand when this very thing of after-care would be submitted to us. As long ago as 1897 Dr. Richard Dewey of Wisconsin, as a member of a special committee of the American Medico-Psychological Association, addressed the National Conference of Charities and Correction on the subject and argued this proposition, which now no longer requires argument. Dr. Adolf Meyer, who has been so active in the promotion of after-care in New York State, has said that in coming to Baltimore as director of the new Phipps Psychiatric Institute he is counting upon the co-operation of charity organization workers. And we expect to work with him.

In so doing we are merely extending the principle of after-care which we are already practicing as social workers in co-operation with the general hospitals and dispensaries. The only difference is that in caring for the insane it is to us a new kind of disease—a mental malady—we are beginning to deal with, and we must of

necessity feel our way along until we come to know what it all involves, how many patients are likely to be referred to us, and how much time and labor they will require.

The plan, as I understand, carries with it the recognition on the part of the hospital physician that the treatment of the patient, if it is to be adequate, must reach beyond the hospital, out into the family, the neighborhood and the workaday world—into the world in which the social worker is on his own ground, and where he is supposed to go about his business as familiarly and efficiently as does the physician in the hospital or institution for the insane. It is an extra-institutional treatment to which the social worker is called, and this is exactly what he is peculiarly equipped and qualified to do.

It goes without saying that the social worker cannot do his best with the insane, or with any other kind of patient, without the steady and sympathetic co-operation of the physician. He will need fair warning, in every instance, of patients about to be referred to him. Insanity does not usually develop over night, and the conditions which in each case produced it cannot be looked into and altered or amended—or, if need be, transformed—over night. If there is to be any assurance that the patient is to return to his old haunts without danger of relapse, the social worker must have time to get into the old environment ahead of him and see that his house is set in proper order. This is the only sane way.

Not only must the social worker be forewarned; he must be forearmed. He must have the expert counsel and advice of the physician as to the patient himself. The personal equation enters into every case. There is no rule-of-thumb to go by governing all cases, even of the same type. Each is peculiar in itself. And the physician knows his patient.

On the other hand, the social worker who must advise with the physician as to the patient must, in turn, be advised with by the physician as to the outside world into which the patient is to go upon his parole or discharge. And as the authority of the physician is necessarily supreme in the medical and institutional care of the patient, so must the authority of the social worker in the extra-institutional or social care of the patient be recognized. In other words, the responsibility of the social worker begins where that of the physician ends—at the point where the patient enters once more upon his life as a citizen of the world, but requiring attention and care such as will save him, if possible, from ever relapsing into insanity. It is a responsibility for domestic, industrial and social adjustments.

The after-care, therefore, which the social worker is expected to give to the convalescent insane is nothing more nor less than that which he is already giving to patients otherwise afflicted. He begins with the physician's diagnosis of the case. He supplements it with a social diagnosis, investigating the home, the occupation,

the recreations, the habits of life of the patient—everything that makes for good or ill. And then, having gotten at the facts, he determines upon the social treatment necessary for that individual case, and prescribes for it accordingly, and sees that the needs are supplied.

Sometimes it is money to buy food that is needed. Oftener it is not money, but advice as to what kind of food to buy, how to cook it and how to serve it. Or there may be bad housing, or overwork, or need of a friend, or what not.

In short, the physicians, as we understand it, want the social workers to put into the after-care of the insane the same kind of intelligence, discrimination, common sense and hard work that they themselves are putting into the institutional care of the insane.

And there is practically no limit to the possibilities of this after-care. It is a conservation measure both in dollars and cents and in human lives. The one thing needful is an adequate force of social workers. The social workers have backed with might and main the successful demand of the medical fraternity for adequate institutional care of the insane by the State. May we now look to your fraternity to support the social workers in their appeal to the public for money to secure a sufficient number of workers to provide adequate after-care of the insane?

DISCUSSION—*Continued.*

Maryland Psychiatric Society, in Session at Annapolis:

Gentlemen—I have been asked to discuss the subject of "After-Care." I feel, however, that what I say will be more of a hearty endorsement than a discussion, for the after-care of the insane is a subject in which the Supervisors of City Charities are deeply interested, and have felt the need in their many years' experience with the mentally deficient. Coming in contact, as they have, with a large number of these unfortunates, it is impossible not to be impressed with the fact that in many cases a committee for after-care is most important. Many of the patients tax those interested in them to the utmost to determine the wisest course to pursue. In fact, the home surroundings in many cases are such as to insure their return to the hospital almost before they are discharged, whereas under different conditions there is reason to believe they might entirely recover.

There is at present a young woman under our care who, through excesses, was sent to the insane department at Bayview. Her mind is now clear, and she has been transferred to and is detained in the alms department because efforts have been made by several of her male companions to again get possession of her. For her protection a good home in the country is being sought for this inmate.

Another who has little will power is out on parole under the care of earnest Christian people, who keep her under observation night and day.

Recently a man became so infatuated with a young girl while his wife was under treatment in Springfield that he sought in every way to have her detained permanently in the hospital. Her mind cleared up and she could have returned to her home. The husband, however, declared he would not receive her, and it was feared in her weakened condition that the mental strain and excitement incident to her return, following her knowledge of his perfidy, would be disastrous.

The plan to have an "after-care committee," who would be advised of the discharge of a patient two weeks previous to the patient's leaving the hospital, would give ample time to study the individual and the home surroundings, and such a patient, under the observation of a special visitor, who, in turn, would report to the committee, would be a big improvement over the patient's present comparatively neglected condition. In order to do the work, even in a modest way, the active co-operation of the private charities is essential, otherwise it would require a considerable annual outlay. The Supervisors of City Charities are ready to co-operate as far as in their power. They may be of assistance to the committee in arranging to have such patients re-entered into the State hospitals promptly by a parole system, which would obviate the present great difficulty of having to wait weeks or even months before a discharged patient can again return to the institution. They hope also in other ways to be of practical service as the committee develops its work.

Respectfully submitted,

NATHANIEL G. GRASTY.

DISCUSSION—*Continued.*

The movements for after-care in social endeavor, which touches many phases of philanthropic activity, arise from the insistent demand for completeness and permanence in our remedial work. It is the old dictum of Lincoln over again—nothing is settled until it is settled right. Bringing help to bear at the acute stage, refusing it before conditions have become intolerable, and withdrawing it after the crisis has past is unintelligent and expensive, for such work is only partially done, and has to be repeated. Gradually the public is coming to understand that it is concerned with preliminary causes and after-effects, as well as with the body of complaint itself. We see this in the campaign for better housing and against preventable disease, and also in after-care for consumptives and

convalescents, even in the probationary system, work colonies for inebriates and the like.

When I told Miss Mary E. Richmond at St. Louis that we could get money in Maryland for children's institutions more easily than for the insane, she said that interest was general in institutions pleasant to see and exhibit, but was lacking where display was impracticable or concerned itself with unpleasant things. The public aversion to the insane is probably the reason why private benevolence, of purse or service, has been so niggardly in this connection, and it would require a long and efficient campaign of education to make an impression upon this universal prejudice. But the removal of this prejudice is one of the prerequisites to socially efficient co-operation in re-establishing the cured insane among the great body of independent, self-sustaining men and women. This prejudice stands in the way of the fullest sympathy for these unfortunates; it cuts off financial aid and personal interest. To ask the ordinary friendly visitor to assume charge of a patient who had been insane would be to startle him, unless his attention had been directed to this form of work by such discussions as you have had here today.

The education that is needed does not refer simply to the volunteer social worker, but to the professional as well. Most of us have grasped the principles of after-care, but the technique of after-care as applied to the insane is a specialization that few of us have achieved. Here the physician, with what has been called the "social sense," must lay down principles which the social worker must develop and carry into detail. After-care work among tuberculosis patients has familiarized us with the requirements of air, food and rest which such patients need, and the public has not been slow to respond with support. A like knowledge of the requirements of insane patients will send the social worker again to the public explaining a new duty and asking co-operation along fresh lines.

I say a new duty, referring to our local situation, for after-care for the insane has been undertaken elsewhere and has assumed an unquestioned place among the activities that must be pursued, not only for the benefit of unfortunate sufferers, but also for the general good.

It is now for us to face in a practical way the situation as it is found in our own community. The plan outlined by Dr. Herring is simple and ought to be found practicable. Exactly how much of a burden it will throw upon the already hard-worked charities it will not be easy to estimate. Any considerable additional strain will, I suspect, necessitate special provision on the part of the charities to respond adequately to the task placed upon them. I believe the time is ripe when support for the contemplated work can be obtained; at least one can say with some confidence that charity organizations will be willing to consider carefully the need of adding this to their many other activities.

The plan calls for service similar to that which is done with the handicapped in adjusting them to society—that is, the placing of people not able to do a hard day's work with the same efficiency as the normal worker in positions where their abnormality will count the least against them. The recovered insane patient, if he has no other handicap, has that of suspicion and prejudice, which he will encounter wherever his story is known. In many instances his former infirmity will be an absolute bar to employment, as the stigma that the insane have suffered under for ages cannot be removed in an instant either from employer or fellow-employee. Much can be said on this score, but my remarks need not be extended here. In addition to the readjustment of the patient in the workaday world, there are the protection and the strength that his spirit needs—protection from those forces and conditions that helped to break him down, and strength from an outpouring of deep sympathy and real interest from those who would make his return to ordinary life permanent and useful. On the material side this plan may require a more tranquil and a higher standard of life, calling for economic betterment. Spiritually, there will be drafts on the fountains of love and trust, which, though never sufficient, are seldom entirely dry.

Dr. Herring's plan contemplates a combination of forces to which we are becoming accustomed, namely, team work between physician and social worker. In the fight against occupational diseases, child labor, bad housing, tuberculosis and a hundred other ills we see in constant operation the joint attack of the physician and the social worker. A man cannot isolate himself from his environment, step into a hospital as a detached phenomenon, be healed and return to his former life, forever immune against its disintegrating elements. Life is not cut up that way. There are always a past history and a history to come, and they play determining parts in the drama of the individual. At present, for the most part, the field of the social worker covers only the history to come. Preventive work, prophylaxis, so far as it concerns the evils we have to do with, has not been attempted with the breadth and thoroughness that its overshadowing importance demands, but all effort is moving that way. The leaders in social work are marshaling the forces of social help for the campaign that will have as its goal "before-care," if I may use that term, rather than after-care, no matter how completely the practical needs of the hour absorb us in mending that which has already been broken. It speaks much for the optimism of the modern man that when he has unearthed a great social and human evil, instead of being staggered by the task opening up before him, he resolutely sets to work to repair the damage, with what success no one can better tell than the modern physician.

LOUIS H. LEVIN,
Secretary the Federated Jewish Charities of Baltimore.

A PLEA FOR THE BETTERMENT OF HEALTH IN COUNTRY DISTRICTS.*

By C. W. G. Rohrer, M.A., M.D., Ph.D.,
Baltimore, Md.

THE term "country district" as used in this paper is construed to mean "a country town or village as a center point, with its surrounding rural free delivery territory."

That country districts do not receive full and proper public health recognition must be apparent to every careful observer. Their remoteness from public health centers and their inaccessibility are at best but lame excuses for this glaring neglect of the health and happiness of a large body of the citizens of our State. Notwithstanding the fact that the natural conditions of country towns and country districts are usually ideal and conducive to health and longevity, the actual state of affairs is frequently disappointing. This is largely due to lack of attention on the part of the town physician or health officer. As a consequence, the average resident of a country district or country town is totally ignorant of even the first principles of sanitary science.

Taking the average country town or countryside, what are its environments? So far as natural scenery and healthful location are concerned, it is indeed truly blest. Pure air and sunshine, nature's best tonics and healthgivers, are bestowed upon its inhabitants with a most lavish hand. The morning bird singing by the window, the fragrant flowers blooming by the wayside and, in the ever-memorable words of the poet Gray, "The swallow twittering from the straw-built shed," lend additional grace and sentiment to country life; indeed, they give to nature a charm and romance which are all her own. Green foods and vegetables direct from the gardens of the inhabitants, and fresh eggs and poultry, all of their own raising, adorn their tables. They are not compelled to eat chickens kept in cold storage for a year and a half, or eggs salted away for six months and then sold as "strictly fresh eggs."

But the residents of country towns and country places are exposed to innumerable other dangers, a knowledge of which, up to the present time, is practically a sealed book to them. Let us enumerate some of these dangers. For example, "The Old Oaken Bucket," famous in song and in story, as it arises from the well bubbling over with its sparkling coolness, may be reeking with deadly typhoid bacilli. "The Well at the Forks of the Road," used by a whole neighborhood and dear to the heart of the writer, may be literally teeming with disease-producing and death-dealing germs. "Old Dog Tray"—and who does not love Foster's old song?—may accidentally transmit to one or more members of the family a rare species of tape worm—*Taenia echinoccus*, which

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causes fatal hydatid disease. The common household pet, the tabby cat, sleek and handsome in her tortoise-shell coat, yet not as cleanly in her habits as she ought to be, may transmit amoebas and other intestinal parasites. The house cat has also been known to transmit scarlet fever and diphtheria. The pestiferous rat, whose geographical distribution is coeval with man himself, may convey trichinosis, tuberculosis, leprosy, cancer and even bubonic plague itself; likewise the ground squirrel, the beautiful striped creature which chaseth across the lawn. The writer of this paper believes it possible that the rat or the mouse may even prove to be the conveyer of pellagra, that terrible leprosy of the present age.

But still more deadly and more greatly to be feared in country places are the infectious and communicable diseases. The average countryman does not believe in germs. To him the germ theory is a Baron Münchhausen story—the stultified product of a mind prejudiced and biased by too much book learning. The country resident still believes tuberculosis to be hereditary, and only hereditary. He cannot comprehend how typhoid fever could possibly be transmitted through milk produced in his dairy, unless his cows are suffering from the disease. Diphtheria, in his opinion, is nothing but sore throat, and can be cured by the internal administration of sulphur. As for measles, he regards it as so simple a thing that he does not even call in a physician; yet 69 deaths result annually from this disease. Whooping-cough is cured with liberal potations of melted butter and vinegar, if mare's milk is not to be had, and even tuberculosis is alleged to have been cured by rubbing the chest with goose grease. Influenza, so fatal in the very old and in the very young, is treated by anointing the nose, throat and chest with hot mutton tallow. Typhoid fever, the scourge of country districts, is also often looked upon by country people as simply "bowel trouble" caused by eating too much fruit. The following is interesting as a "*certain cure for bite of a snake*:" "Drink as much whiskey as you can. It will do no harm, and is a certain cure; use it immediately after the bite."

How shall we proceed to better the conditions which I have described? First, the rôle played by domestic animals, household pets and insects in the dissemination of disease should be pointed out; secondly, the principles of ventilation, especially of public buildings and of sleeping rooms, should be explained. Probably on no other subject are the inhabitants of country towns and country places so grossly ignorant. They should be taught that night air, if it be pure, is not more dangerous than day air. They should also be taught, as Prof. Irving Fisher of Yale University tells us, to "open their bedroom window wider."

Concerning the infectious and contagious diseases, it is universally admitted that typhoid fever is pre-eminently a country disease. The country home is the stronghold of the typhoid bacillus. It was Dr. John S. Fulton, a name so well and so favorably known to this organization, and formerly secretary to the State Board of

Health of Maryland, who first emphasized this important sanitary fact.

In order to eradicate typhoid fever we must attack the disease at the very source of its origin. We must go to the home in the country and see to it that the typhoid bacilli are killed in the bed-pan. In other words, bedside disinfection is to be imperatively demanded. The location and condition of the water closet and its proximity to the well or spring should be ascertained. It might be helpful to add that there is scarcely a country home which has not at least an apology of a water closet, but only the women folks use it. Box toilets, to be cleaned at stated intervals, should be required.

But the old family well, the only source of water supply for the household, has become infected. What are we going to do about it? Shall we paint the pump? Shall we cause the old well, with its halo of tender memories, to be filled up and forever destroyed? Never! It is unnecessary. Let us hasten to do these five things:

(a) While the water supply is under investigation let us insist upon it that all the members of the household use nothing but boiled water for drinking and for culinary purposes.

(b) Instead of painting the pump we should clean out the well.

(c) We should see that the well is properly protected from surface drainage.

(d) We should improve the sanitary conditions in the neighborhood of the well. This is far and away the most important step of all. If this is done we need entertain but slight fears of Pettenkoffer's "ground water theory" of the transmission of typhoid fever.

Fifth and lastly, we should provide for a systematic examination of the water supply at country places. The water from the average town or country well or spring should be analyzed chemically and bacteriologically once in two years.

With regard to the other infectious diseases, the inhabitants should be taught to report every case of infectious disease to the town physician or health officer, no matter how seemingly trivial. The people could thus be trained up to a high grade of efficiency. In many instances lack of instruction explains the apathy of the laity toward effective public health administration.

The economic loss sustained by the people of Maryland through the agency of preventable disease is a considerable item. Take, for example, typhoid fever. In 1909 there were 350 deaths from this disease in the counties of Maryland. The financial value of an adult human life has been placed at \$5000; consequently the loss to the State occasioned by typhoid fever alone is \$1,750,000 annually.

The picture which I have painted is not an exaggerated one. Six weeks ago I visited Bryantown, Charles county. In a town of about 50 people there were 13 cases of typhoid fever, as my good friend Dr. Carrico will testify. In Wicomico county, in the month

of March, there were four deaths in one family from typhoid fever. At the present time a house epidemic of typhoid fever in Lonaconing, Allegany county, is just drawing to a close. There were seven cases, and at this writing two deaths, all in one family. The town of Burkittsville, Frederick county, under the very shadow of Frederick, from which city our worthy president (Dr. Franklin Buchanan Smith) has come, is subject to a yearly outbreak of typhoid fever. Yet the people of Burkittsville have never received public health assistance.

In order to permanently improve the sanitary conditions of country districts, a concerted plan of action is necessary. Let us organize a commission to be known as the "Health of Towns Commission." Let us strive to do for the various towns, villages and country districts what Dr. Bosley is doing for the city of Baltimore.

The "Health of Towns Commission" shall consist of the town and county health officers and a chairman appointed by the Medical and Chirurgical Faculty of Maryland. It shall be modeled after the old English "Health of Towns Commission," organized in 1843 with no less a personage than Sir Richard Owen, the foremost anatomist of the age, as chairman. The character of work performed by the "Health of Towns Commission" is indicated by the following extracts from Prof. Owen's diary: The diary states that he "went off one morning at 9 o'clock to inquire into the state of health of the men engaged in sewers, etc. He went also, accompanied by a police officer, into some of the miserable lodgings at St. Giles'. When he came back he was quite distressed at the misery and filth he had witnessed." A few days later we find Sir Richard examining the slaughter-houses in London. The commission was also requested to inquire into the best means of supplying large cities with efficient sewerage.

In September, 1844, we find Prof. Owen busily occupied with a sanitary survey of his own native town, Lancaster. In his diary he states that he had the "heartly co-operation of all the most intelligent medical men and builders." Subsequently, Prof. Owen states in his diary that he "spent another busy week in Lancaster inspecting all the abodes of the poor and taking notes of the worse cases which admit of relief by better regulations; made himself acquainted with the present drainage of the town and its water supplies, and leaving instructions to architects for improvement plans and their expense, and to registrars and physicians for tables of mortality and disease." On January 25, 1845, Prof. Owen states that he spent the afternoon in going over the House of Commons, in order to see about the best mode of lighting, etc.

Enough has been said to indicate the duties of the proposed "Health of Towns Commission." To repeat, the word "town" implies not only the town itself, but also its rural delivery territory. I respectfully recommend that the Medical and Chirurgical Faculty of Maryland form such a commission. By so doing I believe we shall be in a fair way to bring about the "betterment of

health in country districts." We shall then have practically every foot of ground in the State under the active jurisdiction of a public health official. The good we shall do will live after us. It will tend to elevate the *esprit de corps* of our profession. Then the praiseworthy remarks made by Governor Draper at the annual dinner of the Massachusetts Medical Society will also apply to us—"I believe there is no profession which is bringing forward so many innovations for the benefit of mankind as this old and honorable profession of yours. Medicine has made bigger strides and developed more than any other profession."

THE CARE OF THE DEMENTED AND UNTIDY INSANE.*

By Frank J. Flannery, M.D.

THE care and treatment of the insane in general and the untidy insane in particular occupy a unique position in the philanthropic works of the age. For the mentally afflicted a new era has dawned, even though we, in our haste and enthusiasm, wander back to the middle ages, much maligned and misunderstood as they have been, for our panaceas. From ancient and modern experience propositions are being evolved, blended and adapted. With renewed energy the various phases of the custody and treatment of God's sorely afflicted ones are being studied, with an intensity that comes with the knowledge that all that mankind can do in the intricate and difficult paths of science and research will be done.

Today the condition of the insane is more widely known and understood. As this knowledge broadens the stricken ones will be benefited as never were they before. No one unfamiliar with hospitals for the insane can realize the immense amount of work and the almost infinite attention to detail which is required to take care of and minister to their wants, condition and environment. It is a task which, to the uninitiated, seems almost impossible, yet it is performed, often as a labor of love, by the medical men, nurses and attendants, both in the private as well as the State institutions.

The subject is too big for abstruse discussion, too varied for detailed narration and too complicated for the limits of an ordinary paper. The principal features and experiences involved cannot be comprehended by the lay mind—even some medical minds—without study. Only by the united study and efforts of those directly involved can this be accomplished. Individuals working alone may bring about some changes and improvements, but the

*Read before the semi-annual meeting of the Medical and Chirurgical Faculty of Maryland, Annapolis, September 14, 1910.

experience of one is not the experience of all. Hence there must be unison in effort, harmony in knowledge and mutual co-operation in the application of these experiences.

Such is the force and power of evolution that you physicians, working in the solution of the problems of insanity, directing the public and private resources, will in the future, whether near or distant, be rewarded by the fact that a large number of acute mental diseases will be cured. The curable cases restored to normal mental conditions, there will remain only those weakened and rendered helpless by age—the senile demented, the dementias following the acute stage, the secondary demented, occasionally dementias of a primary character, and those dependent upon, or the sequence of disease, tumors and coarse brain lesions, and lastly, the chronic insane, who have passed beyond the efforts of the observation wards. In order to lessen the number of these latter classes, it becomes necessary to converge all our forces, and in one grand phalanx enter the combat.

That insanity is on the increase in our country is a fact to be lamented. No matter what the cause, the fact remains, and it is our duty as physicians to endeavor to soar above expedients and palliatives in order to mitigate, if we cannot destroy, this social gangrene. You who are daily fighting this battle must show the way. Let our family physicians, our hospital experts and specialists enlighten the ignorant in the laws of sanitation; our sociologists, whether economical, political or humanitarian, improve the masses; our religionists, throwing hope into the balance, guard their morals and make them useful, mentally as well as physically. Unfortunately, outside the protecting influence of our asylums, the number of demented preponderates, and from their ranks does blind Cupid often select his victims. Hence, where and when it is necessary, let our Legislatures enact strict laws so that a question of mental heredity arising there shall be no physical union of "two hearts that beat as one." Even going further into daily life, it has been suggested, if it be possible, to convert the theologian, and, when you physicians shall have blazed the way, apply the cold steel in a harmless operation.

The detail of the various circumstances connected with the acute cases in our asylums and retreats has been the subject of much thought, study and application that no reference, except incidentally is necessary, in this paper. The long catalogue of chronic and incurable that throng our halls is appalling. In daily contact with the enormous mass of spoiled and ruined intellects, we are in a position to study the causes and warn the public, as well as the family physician, against delay in the management of any unusual mental divergence in their friends and patients. A great factor in diminishing the number of the chronic insane is the tendency to evolve, or rather revert to the observation wards of the middle ages. For despite our much lauded efforts in this respect we are only modernizing, possibly on a more definite plan,

the conditions which obtained in Continental Europe and even the benighted East during the eleventh, twelfth and thirteenth centuries. Physicians and friends should make use of these observation wards without delay, for by the prompt and intelligent treatment there offered will the list of recoveries be enlarged and the tendency to dementia diminished.

It is not pretended that these observation wards and asylums, call them what you will, possess any remarkable or exclusive therapeutical agencies; or that the officers are endowed with any extraordinary skill or possess medical knowledge unknown to others. Much the same principles applicable to other diseases govern the alienist and direct him in the selection of the remedial agents universally used and recognized. But the great advantage which these wards and institutions offer is found in the superior means and methods for carrying into effect a routine of diet and medication, bodily and mental exercise, and many other influences which will best divert the mind.

Once relegated to the wards of the chronic and classified as demented, these unfortunate derelicts have yet a chance. A large number, by reason of work or occupation, while they do not recover, will improve greatly in their conduct and habits. Owing to the constant attention given to their health, the regular inspection of their general condition, as well as their particular diseases, the downward tendency of their mentality is often arrested and untoward symptoms kept for years in abeyance and acquiescence. The alienist and assistants, bestowing moral as well as medical treatment, are often rewarded by the fact that chronic cases, even demented, are so much improved as to be returned to their homes and there resume, in a greater or less degree, their former labors and responsibilities. As for the balance, the large class of permanent residents, composed chiefly of the incurable and demented, a condition of comfort and protection is attained by the wise and conscientious supervision of the officers.

In no instance is the medical knowledge and skill of the physician more sorely tried than in the care and treatment of the chronic, demented and untidy insane. It goes without much reasoning that the first desideratum is to have suitable buildings and grounds. These obtained through the resources of the State and private finance, the next step is to equip them with an expert medical corps and intelligent and conscientious nurses. These, to be effective, must forsake all other works and specialities and devote their lives and the fruit of study and observation to the care, direction and treatment of their helpless charges.

The ideal institution is one where there is a dual management, one the medical, the other the physical provider, but both working harmoniously and with one purpose in view. These conditions granted, it now becomes the duty of the medical officers and nurses to study each inmate, applying remedial, moral and custodial care where and when indicated. By the wise selection of medicines, intelligent exhibition of the same, in conjunction with a generous

diet and due attention to exercise and occupation will a large majority of the inmates be benefited.

It is a mistake to suppose that the chronic and demented can be treated by medicinal means alone. Insanity is often the sequence of a moral cause, and often therefore cured or alleviated by moral means. Many cases likewise are the result of a combination of moral and physical causes, therefore there should be a happy blending of the suggested treatments.

Moral treatment among other things comprehends all the surroundings, associations and occupations of the insane, and it is mainly in this direction that a great advance has been made in the last half century. In the case of demented and untidy insane, the all-pervading principle that should govern our intercourse is the law of kindness and sympathy. Harshness and severity under no circumstances should be tolerated or allowed to go unrebuked. View each patient in the light of a trust committed to our guardianship, care and protection.

It should be the aim of all superintendents to increase the means of moral treatment which will divert the minds of their charges from morbid channels of thought. Employment and occupation are among the moral therapeutics of immense value in the treatment of all classes, and especially so in the care of the chronic demented and the noisy, turbulent, destructive and untidy insane. Of such value and importance is this that it should be made legally a condition in the reception of patients. To the physicians upon whom devolves the responsibility should be given the power to prescribe labor as well as castor oil. Care must be observed in the selection of the kind of work, often leaving it to the caprice or wish of the patient, as labor for mere profit must never, under any circumstance or condition, be allowed or expected. Where physical disease or extreme exhaustion do not contraindicate, the physician should survey each individual case and determine the hours and kind of labor. Usually at first it is difficult to get the demented and untidy to work or engage in any occupation. The granting or withholding of extras or small privileges will often lure refractory ones. Long years of observation and experience have proved that the most difficulty is found with the private or pay patients, whose quarters and diet are already sufficient, often luxurious. These cannot be lured, but must be persuaded by example and suggestion and by the fact that labor or occupation is not degrading, but used as a means towards their recovery. By tact and example, often by an appeal to reason in their quiet moments, will the "lady and gentleman" so familiar to asylum men deign to work in the garden or on the farm, in the laundry and kitchen, even overcome their repugnance to work so far as to engage in ditching and road making. In a short time they begin to realize the value of labor and exercise in bringing rest, appetite and sleep. Induce the noisy and restless, the pugnacious and untidy demented to work steadily for a few weeks, and you will, while failing to make a cure, see a marked change for the better.

in his or her condition. His sleeplessness will be overcome by fatigue—the best opiate; his rash and morbid excitement worked off by hoe and rake, and his daily life devoid of destructiveness. Surveying the physical qualities, it should likewise be the special purpose of the physician and nurses to measure the mentality of each dement, then induce him little by little to practice the numerous little observances of life, and, in a manner best suited to allay morbid excitement, to dispel painful apprehensions and substitute a healthy for a diseased activity of mind. In other words, bring to bear upon his disordered fancy, his morbid imagination, his capricious and irregular conduct, all those various and diversified means so conclusively established and comprehended in the term moral treatment. Protect him from all perturbing influences, subject him to a gentle but firm discipline, teach him as you would a child to regulate his habits, his feelings, his impulses, his emotions and other mental associations.

Amuse your patients with theatricals, soothe them with music, educate them so that, step by step, they will graduate from the sheen of the polished door knob to the more complex and intricate requirements of the field and shop, the sewing room and the laundry.

When the weather is favorable keep them in the open air as much as possible. When the short days and long evenings of winter's gloom arrive they will require more and more your attention, and all your resources should be taxed for their mental and physical exercise.

Be careful in the amount and kind of labor or exercise prescribed, remembering that the chronic and untidy, as well as the aged and paralytic dement, have been weakened by previous recurrent attacks of melancholic agitation and maniacal excitement in which their nervous and physical energies have already reached the borderland of exhaustion. Arouse these and the lazy patients, and you must be guarded, for if they—left to their own whims and inclinations—become active you may rest assured that this activity will always be on the side of mischief.

When all means shall have been exhausted and there is no response to your efforts; when your patients of this class become restive and noisy, quarrelsome and dangerous, filthy through disease, accident or design, do not resort to harsh, strenuous or violent methods to correct or subdue. To protect them and avoid their disturbing influence upon the quiet and tranquil, better to seclude for awhile under observation.

In conclusion, alienists, nurses and attendants, remember that your work in behalf of those committed to your care does not end with the prescription, housing and environment; you must educate these poor ones to become useful and quiet, and ere long you will bring about a period of unruffled serenity preludeing the eternal calm.

Book Reviews.

PRINCIPLES OF SURGERY. By Nicholas Senn, M.D., Ph.D., LL.D., C.M., late Professor of Surgery, University of Chicago; Professor of Surgery in Rush Medical College in affiliation with the University of Chicago; Attending Surgeon to the Presbyterian Hospital; Surgeon-in-Chief to St. Joseph's Hospital; Surgeon-General of Illinois, Lieutenant-Colonel of United States Volunteers and Chief of the Operative Staff with the Army in the Field during the Spanish-American War. Fourth edition. Thoroughly revised by Emanuel J. Senn, M.D., formerly Associate Professor of Surgery in Rush Medical College in affiliation with the University of Chicago, and Emanuel Friend, M.D., Instructor in Surgery in Rush Medical College in affiliation with the University of Chicago. With 231 illustrations. Philadelphia: F. A. Davis Co. 1909. Cloth, \$5.00 net; half morocco, \$6.50 net.

The latest edition of Senn's Principles of Surgery is fine as far as it goes. The treatment of inflammation, necrosis, surgical tuberculosis, tetanus, anthrax, etc., is in strict accord with modern ideas. But it seems to us that a modern text-book of this character should have included within its confines something about new growths, syphilis, gonorrhea, etc., as students as a rule do not purchase two or three books when they can get the requisite information from one.

The cuts are numerous and very well executed; the print is large and on good paper. The development of the subject matter is logical and begins as it should with regeneration, and then passes on to the various forms of degeneration and inflammation; then takes up successively pathogenic bacteria, necrosis, suppuration, ulceration and the surgical diseases.

It gives us great pleasure to recommend the latest edition of Senn's to those contemplating the acquirement of a book on the principles of surgery.

HOOKEWORM DISEASE. By George Dock, M.A., M.D., Professor of the Theory and Practice of Medicine, Medical Department of Tulane University of Louisiana, New Orleans, and Charles C. Bass, M.D., Instructor of Clinical Microscopy and Clinical Medicine, Medical Department of Tulane University of Louisiana, New Orleans. Royal octavo, 250 pages. Illustrated. C. V. Mosby Co. 1910. Cloth, \$2.00 net.

Any literature which throws light on this widespread disease is to be welcomed by the medical profession. Its chief function is educational, both to the profession and the laity. The life history, mode of development and conveyance of this nematode is now fully understood. It is known that the eggs are deposited in the feces and are exceptionally resistant to extraneous influences; that the eggs are innocuous; that the eggs pass through a larval stage; that it is at this period that human infection takes place through the skin, coming into contact with the larvæ which readily penetrate the cutaneous structures and thence migrate

to the intestine, where they undergo further development into the adult form. It has also been determined that the affection is perpetuated by infected individuals, especially the carrier cases, depositing their fecal excrement in warm, moist places, where the eggs find ideal conditions for their development. It has also been learnt that the malady is not limited to the tropics, but can be transplanted to colder regions when the conditions necessary for its development are present as in the mines of Great Britain, Germany, Belgium, etc. Owing to its widespread distribution and the difficulty of its control, this volume is bound to exert some influence in its ultimate abatement. Here we have succinctly stated its history, zoology, mode of distribution, symptoms, diagnosis, prophylaxis and treatment. As the authors believe the ultimate eradication of the disease depends on public education, they have used as simple language as possible.

Indeed, the story has been told in such a style as to leave no doubt as to the laity grasping the meaning of the writers. In prophylaxis lies the secret to its banishment. If the authors succeed in impressing on the general practitioner that in infected areas all human feces should be deposited in sanitary privies, instead of along the fence rail, or in the garden, or at some convenient spot around the barn, the book will not have been written in vain.

DIAGNOSIS OF SYPHILIS. By George E. Malsbary, M.D., Professor of Medicine, Cincinnati Polyclinic and Post-Graduate School; author of a "Textbook on the Practice of Medicine," and Monographs on "Treatment of Tuberculosis," "The Rheumatisms," "The Septic Infections," "Meningitis" and "Cerebrospinal Meningitis" (in Wood's "Reference Handbook of the Medical Sciences"); Member of the Academy of Medicine of Cincinnati, the American Medical Association, the Cincinnati Obstetrical Society, etc. Half morocco; \$5 net. Cincinnati: Harvey Publishing Co. 1911.

Syphilis is so widespread that any contribution which makes to the better and earlier recognition of this affection is of paramount importance. A large amount of literature has accumulated during the past year regarding the newer and more accurate methods of diagnosing syphilis. After a most painstaking digestion of this literature and correlating it with his own private and personal experience, Dr. Malsbary has produced a book of undoubted merit.

The bacteriology is thoroughly considered, including a full discussion of the spirochete pallida, tissue sections, the serum diagnosis (both the Wasserman reaction and substitutes for it). The methods of infection are entered into thoroughly. After devoting a limited space to the chancre, the remainder of the volume is given over to the manifestations of syphilis on the part of the various organs. The book is well written, the statements clear, and includes the very latest word on the diagnosis of lues. A very

attractive feature of the book is the large bibliographic references. The general practitioner will find much of service in it, and as a matter of fact should include it among his collection.

RUMPEL—CYSTOSCOPY AS ADJUVANT IN SURGERY. With an Atlas of Cystoscopic Views and Concomitant Text for Physicians and Students. By Staff Surgeon O. Rumpel, M.D., Lecturer in Surgery at the University of Berlin. Only authorized English translation by P. W. Shedd, M.D., New York. With 22 textual figures and 85 illustrations in color on 36 plates. One quarto volume, half leather. Price \$8.50 net. New York: Rebman & Co.

With the advent of the cystoscope the diagnosis and treatment of diseases of the urinary tract underwent marked advancement. The genito-urinary specialist ceased working in the dark; empiricism gave way to rationalism. Dr. Rumpel, in his little monograph of some 130 pages, of which 59 are devoted to descriptive matter and 70-odd to views in color, with description of condition the engravings portray, briefly but concisely describes the uses and limitations of the cystoscope. Although the book contains many practical hints, its distinctive feature is the pictorial atlas. The illustrations are extremely well executed and exceptionally true to nature, making them invaluable as a guide to like conditions.

SYMPTOMATIC AND REGIONAL THERAPEUTICS. By George H. Doxie, M.D., Professor of Medicine, University of Kansas. Illustrated. New York: D. Appleton & Co. 1910. Price —.

This treatise includes such subjects as "Symptomatic Therapeutics," "The Treatment of Localized Inflammations," "Regional Therapeutics," "Notes on Remedies," "Materia Medica." It is one of those irritating efforts which the reviewer likes neither to condemn nor to approve. The attempt has been made to include in one volume a handbook of medical practice and an up-to-date treatise on materia medica. It is, as might be expected, a smattering of things. Even as a smattering, its workmanship is uneven. Thus, cascara has its therapeutic uses described under heading of materia medica, while the reader is left to guess at the therapeutics of antipyrine. Again, the reader is carefully instructed how to give castor oil, as "by smearing the sides of the glass with very thick cream, then the oil, then more cream; the patient then takes a teaspoonful of cream into her mouth and bolts it with the contents of the glass at one gulp" (which suggests the sturdiness of the female electorate of Kansas), while no notes at all are bestowed on the taking of nasty salicylates. In the treatment of constipation, senna is ignored. Out in Kansas the natives (as indicated under materia medica) are accustomed to take it boiled with water,

and they are warned against too long boiling, lest the qualities of the drug be impaired.

The author can doubtless compile a better book if only he learns to be less ambitious. A careful revision of the present volume might remove such unguarded statements as that infants under six months of age should not be vaccinated, and that the physician in vaccinating must roll his sleeves to the elbow, but the book could not be made satisfactory.

AN APPEAL FOR HUMAN EMBRYOS.

PROFESSOR MALL of the Johns Hopkins University again requests that physicians send him embryological specimens which are constantly falling into their hands. The collection of such specimens at the Johns Hopkins is now one of the best in existence, has been studied carefully by the staff there, and is being used constantly by anatomists at home and abroad. About 100 published studies on human embryology are based upon this collection, including the "Manual of Human Embryology," in two volumes, published recently by the J. B. Lippincott Company.

Much more material than is now at hand is needed by investigators to further the science of human embryology, as well as to study with greater care the diseases of the ovum and the cause of abortion. To make material of greatest value it should be preserved immediately after the abortion in a 10 per cent. solution of formalin, or by more refined methods if they are at hand. Small specimens should not be dissected, but should be preserved entire in formalin. Of very great value are good histories of the cases, for through them we may discover the cause of abortions and ultimately their cure. Studies of this kind enable embryologists to be of use to physicians in active practice. Specimens should be packed in bottles filled *completely* with the preserving fluid, and not wrapped in cotton. If there are no air spaces in the bottle, no amount of shaking will injure the most delicate embryo. Small specimens may be sent by mail, while larger ones should be sent by express, collect charges, to Dr. F. P. Mall, Johns Hopkins Medical School, Baltimore, Md.

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BALTIMORE, NOVEMBER, 1910

606 IN SYPHILIS.

MUCH interest has been aroused in the medical profession by the announcement of Erlich that he has discovered a specific for syphilis. This new preparation, known as the Erlich-Hata preparation, or 606, from the fact that it was the 606th more or less arbitrarily tested drug, is claimed to be marvelously effective in the treatment of lues. Cases which do not yield to other lines of treatment are said to be cured with one injection of 0.3 gram of dioxydiamido-arseno-benzol, or 606. In the first burst of enthusiasm many investigators who have given the remedy somewhat more or less of a thorough try-out have reported wonderful results. John A. Fordyce (*Medical Record*, October 1, 1910) reports the results in 16 cases in which he employed this remedy, among them one of scaling syphilis of the palms; one of early malignant syphilis, with ulcerative and fungating lesions of the face, chest and arms; one of multiple chancres of the lips, etc., with most marked improvement. In only one was there any serious symptoms, and in only one case a relapse occurred. He administered somewhat larger doses than recommended by Erlich, in some instances giving as high as 0.6 or 0.7 gram. Wolbarst's (*Medical Record*, October 15, 1910) personal observations after its employment on seven cases lead him to the following conclusion: The preparation exerts a marvelous effect on a large proportion of the cases in which it is used properly. In some instances its effect is not so striking, but the results are nevertheless very good. In a few cases the result is negative. He believes that if this preparation is not a complete specific for syphilis, it is nevertheless the most powerful, potent and effective remedy that science has yet produced for the treatment of this disease.

As yet it is a mooted question whether the cure remains permanent. It has, however, been determined that the organisms disappear from the blood and the Wasserman reaction becomes nega-

tive—two very suggestive facts as regards its specificity. Moreover, after an apparent cure monkeys have again contracted syphilis experimentally.

The dose employed by most investigators is 0.6 gram. Some employ as small a dosage as 0.3 gram; others as large as 0.8 and even 1 gram. The safest dose seems to be 0.6 gram. In women 0.5 gram and in children 0.025 gram is the most preferable dose. It may be given either intravenously or intramuscularly, the latter being the method most popular. If the intramuscular method is selected, either the muscles of the buttocks or those of the back answer the purpose. The solution should be freshly prepared immediately before using and should be absolutely sterile. As in the administering of any other hypodermic solution, the skin should be cleansed and rendered as aseptic as possible. After the injection of the dose the patient is put to bed for four or five days, and even longer if deemed necessary. Kromayer divided the dose and injects half into each buttock, so as to obviate abscess formation. The injection in the majority of cases is claimed to be quite painless. When it does occur, it has generally disappeared by the fourth day. As a rule, after the injection there is an infiltrate, which entirely disappears in a few days. Rarely this infiltrate becomes acutely inflamed and suppurates. The temperature often rises to 100 to 200° Fahr. In a small number of cases an exanthematous rash covering the entire body appears.

The effect after the use of this remedy on initial, secondary and tertiary lesions has been remarkable. The primary lesion in most instances has disappeared by the end of the second week, improvement being noted in two or three days after the injection. The secondaries are said to entirely disappear by the end of the second week, occasionally earlier. Many cases of gummata which have resisted mercury and the iodides have yielded to this new remedy. Parasyphilitic conditions and nerve lesions have not yielded as brilliant results; however, some cases have manifested evidence of improvement, and it is believed by the experimenters that with the improvement of the method we may look for greater success. Inherited syphilis is benefited by this line of treatment, generally speaking, but occasionally a case will be run across which resists even the 606 injection. A slight number of cases seem to have the tendency to recur. In these cases it is supposed that the dose has been insufficient, for after the administering of a second injection the lesions promptly disappeared.

Medical Items.

DR. J. M. B. ROGERS of Ellicott City is critically ill with typhoid fever at the home of his sister, Mrs. Henry Phillips, Govanstown, Md.

WE are glad to report that Dr. John W. Chambers, who has been suffering with an infected hand, is on the road to recovery.

DR. G. MILTON LINTHICUM has removed his offices and residence to 817 Park avenue. Dr. Linthicum has completely recovered from his recent attack of typhoid fever.

MISS E. M. LAWLER has been appointed Superintendent of Nurses at the Johns Hopkins Hospital, vice Miss Georgianna Ross, resigned.

DR. JOHN EDWIN LEGG of Oakland, Md., sailed for Vienna October 8, and will take a six months' course in medicine and surgery at the clinics there.

DR. AND MRS. CHRISTIAN DEETJEN have returned from a trip to the Mediterranean.

DR. ROBERT HOFFMANN has returned from a three-month trip abroad.

THE engagement is announced of Dr. Russell Wesley Raynor of Vienna, Md., to Miss Lola E. Wilson of Deal's Island, Md. The marriage will take place November 16.

DR. CARY B. GAMBLE has returned from a trip to Canada.

MARRIAGES.

HOAGLAND COOK DAVIS, M.D., University of Maryland, '02, to Mrs. Katharine Carroll Dowell, both of Baltimore, October 19, 1910.

EMILE BONNIWELL QUILLEN, M.D., University of Maryland, '04, of Wilmington, N. C., to Miss Leila Griffith Owings of Baltimore, at Baltimore, October 18, 1910.

PERCY ROLAND FISHER, M.D., University of Maryland, '97, of Denton, Md., to Miss Alma T. Bushwell of Winona, Minn., at Winona, September 29, 1910.

WILLIAM BURGESS CORNELL, M.D., Johns Hopkins University Medical Department, '03, of Hawthorne, Mass., formerly of Sheppard

and Enoch Pratt Hospital, Towson, Md., to Miss Bettie Grace Duncan of Lutherville, Md., at Lutherville, October 11, 1910.

HOWARD DAVIS LEWIS, M.D., University of Maryland, '00, to Miss Floride Lewis, both of Baltimore, September 22, 1910.

JAMES ALEXANDER BOND, M.D., University of Maryland, '01, of Parkersburg, W. Va., to Miss Bertha George of Glen Marcy, Md., October 1, 1910.

HARRIS GOLDMAN, M.D., to Miss Lena Goldstein, both of Baltimore, August 21, 1910.

CHARLES W. RILEY, Johns Hopkins University Medical Department, '07, to Miss Helen Cruikshank, both of Baltimore, October 4, 1910.

BENJAMIN H. B. HUBBARD, M.D., University of Maryland, '95, of White Stone, Va., to Miss Lloyd Estelle Betts Smith of Heathsville, Va., at Heathsville, Va., October 11, 1910.

DEATHS.

WILLIAM FRANKLIN HINES, M.D., College of Physicians and Surgeons, '77, died at his home in Baltimore October 17, 1910, of cirrhosis of the liver, aged 54 years.

CHARLES JOSEPH DOWLING, M.D., Baltimore Medical College, '06, died at his home in Springfield, Mass., September 26, 1910, of uremia, aged 30 years.

JAMES FRANK GILLESPIE, M.D., College of Physicians and Surgeons, '97, died at his home in New York city September 12, 1910, of heart disease, aged 41 years.

FRANK BLAIR OLDHAUSEN, M.D., University College of Medicine, '98, died at his home in Harrisonburg, Va., October 8, 1910, aged 34 years.

HENRY L. BEVANS, M.D., College of Physicians and Surgeons, died at his home in Grantsville, Md., September 28, 1910, aged 68 years.

GEORGE L. MCINTIRE, M.D., Baltimore Medical College, '88, died at his home in New Martinsville, W. Va., recently of appendicitis, aged 63 years.

WILLIAM W. SAUNDERS, University of Maryland, '61, died at his home in La Plata, Md., October 6, 1910, of cancer, aged 74 years.

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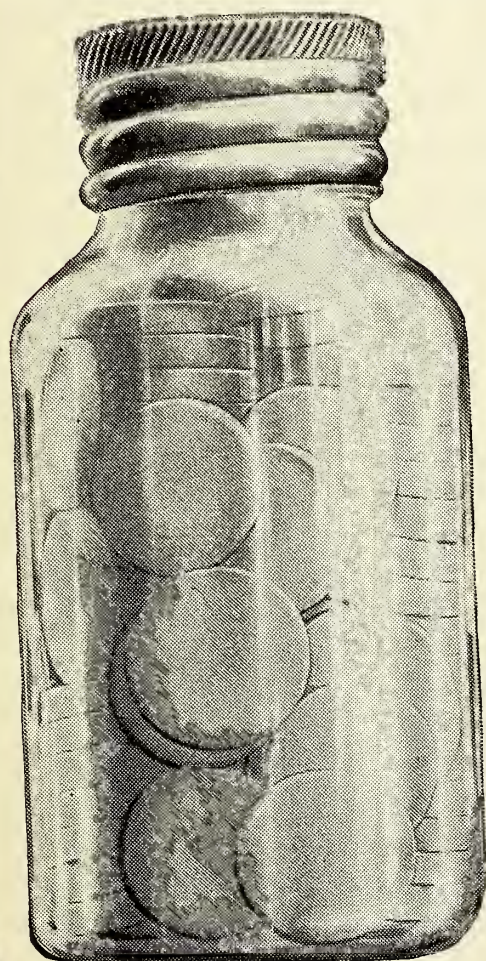
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Correction.

THERE appeared in the *Denver Medical Times and Utah Medical Journal* of October, 1910, an article in which the statement was made that urotropin was originally introduced by Merck. This article was reprinted in the October issue of THE MARYLAND MEDICAL JOURNAL under the heading of "Hexamethylenamin." We have since learned that the editor of the *Denver Medical Times and Utah Medical Journal* has inserted a correction to the effect that urotropin was first introduced into therapeutics by Professor Nicolaier, and is manufactured under his supervision by the Schering Chemical Works of Berlin, Germany.

Editorial Comment.

STATE BOARD EXAMINATIONS.

The Medical Brief.

WE are gratified to see that there is a movement on foot to improve the character and efficiency of the examinations set by the State medical boards for the granting of licenses, with a special view of enhancing their practical value. No one of ordinary intelligence, whether he be a physician or a layman, who peruses the examination papers of the various State boards, as they appear from time to time, can fail to be impressed with the utter ineffectiveness and lack of practical discernment that mark the great majority of the questions asked. On this point we cannot do better than quote the late Herbert Spencer in his essay on the subject in his last book, "Various Fragments." He says:

"There is one general criticism which I feel inclined to make upon examination papers at large. They are drawn up with the exclusive view of testing acquisition rather than power. I hold that the more important thing to be ascertained by an examination is not the quantity of knowledge which a man has taken in and is able to pour out again, but the ability he shows to use the knowledge which he has acquired. And I think that examinations of all kinds are habitually faulty in that they use the first test rather than the last by which to judge of superiority. I hold that in every examination there should be a certain set of questions devised for the purpose of ascertaining what capacity for original thinking the candidate has—questions to which he will find no answers in the books he has read, but to which answers must be elaborated by himself from reflections upon the knowledge he has acquired."

Mr. Spencer's criticism finds, as most of his utterances do, the joint in the harness; and applied, as it may justly be applied, to our State examinations in medicine and surgery, it indicates the very collusion, so to speak, between the college curriculum and the final test (or what ought to be the final test) of practical fitness at which we believe the medical practice act is aimed. Such a system amounts to no more than a mere parrot-like test of memory; it presupposes that any individual who has attended a course of instruction and retained a reasonable modicum of the information packed into him is a fit subject to practice medicine, and it takes no account of the fundamental principles of education or of natural ability.

Quoting again from Herbert Spencer: "It is manifest that those

Open Letter No. 3

Doctor :—

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in authority assume that the goodness of education is to be tested by the quantity of knowledge acquired; whereas, it is to be tested much more truly by the capacity for using knowledge—by the extent to which knowledge gained has been turned into faculty, so as to be available both for the purposes of life and for the purposes of independent investigation. Although there is a growing consciousness that a mass of unorganized information is, after all, of little value, and that there is more value in less information well organized, yet the significant truth is that this consciousness has not yet got itself officially embodied, and that our educational administration is working, and will long continue to work, in pursuance of a crude and outworn belief.”

We commend these criticisms and suggestions of the famous philosopher to the thoughtful and serious consideration of those in high places in the hope that the weight of so eminent and acknowledged an authority may drive home a truth which, however timely, might fail of its mark with only our momentum to back it.

X-RAYS AND CANCER.

The Medical Brief.

It would seem as though a sufficient number and variety of tests have now been made of the value of X-rays in the treatment of cancer to admit of the formulation of some definite status of radiotherapy in this disease. The medical world, and the lay world, too, are anxious to know just what may be expected of this method of treatment, on which such high hopes have been staked, and a rational estimate of its possibilities would be a great advantage to both.

Every little while, from various quarters, we hear reports of cases of cancer being treated with X-rays, with varying degrees of success, and at first blush it appears difficult to weed out anything like an intelligent idea of their real significance. However, after making due allowance for the variation of circumstances incident to even the best established therapeutic agencies, the instances of X-ray cancer treatment appear to fall into two general classes, in which, with a tolerable degree of constancy, the efficacy of the treatment exhibits a parallel course with the differentiation of the two classes.

The two classes referred to are those of external and internal cancer—those in which the lesion is on the surface and those in which it is below the surface. Of these two groups it will be readily seen from the reports at hand that those of surface cancer yield the best, and indeed the only, results from radiotherapy, from which it would be reasonable to conclude that the virtue of the rays depends upon the directness of their contact with the neoplasm. Whether this differentiation really depends upon the necessity of direct contact between the rays and the growth, without the intervention of intermediate tissues, or whether (as is probable) it lies in the fact that a more vigorous application of them is practicable when the growth is on the surface, than can be safely made when other tissues have to be penetrated, the net practical result to the afeusis is the same, at least in the present state of our knowledge.

By just what process the X-rays check the development of the cancerous tissue has not, we believe, been positively determined.

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It can hardly be determined until we have more definite knowledge of the precise nature of both the rays and of the carcinoma cells. It is, of course, well recognized that to a more or less extent the rays have a retarding effect upon all organic tissues—a condition which has interfered more than any other with their employment in therapeutics—and it is interesting to note that this effect seems to be in inverse ratio to the specialization of the tissue, their most marked inhibitive influence being exerted in the case of such embryo cells as are represented in low types of neoplasms. Their disastrous effects upon the reproductive cells are in direct accord with this apparent ratio.

Under present conditions, then, it may fairly be concluded that in cases of superficial cancer the X-ray treatment may be reasonably expected to yield promising results, especially in those instances (such as carcinoma and sarcoma of the breast) where it can be applied with the least involvement of surrounding tissues. But in cases of internal cancer, particularly where a considerable quantity of more or less elementary tissue has to be penetrated, the present outlook in radio-therapy must limit itself to the advantages of the X-ray as an accessory to the knife, either before or after the operation, or both.

Excerpts.

ON SOME PRESENT METHODS OF THE TREATMENT OF CHOLERA.

THERE is probably no disease that has aroused more controversy as regards certain of its aspects than cholera. This is especially to be noted as regards its etiology and treatment. The most opposite views have been promulgated with reference to the latter. Should the choleraic discharge be treated with drugs calculated to arrest them, or, on the contrary, with drugs whose object is to aid the discharge and thus get rid of the poison from the system? I propose in this communication to narrate my own experience and also to mention some more recent methods of treatment.

Let me here narrate my first experience in cholera in India. During the war in Afghanistan I was stationed with the head-quarter wing of my regiment up Shank Gorge (8000 feet high) in the Kurram Valley, where we were engaged in cutting down fir trees for the building of the proposed new cantonment at Shalozan in the valley below. Three times a week I rode down to visit the hospital of the other wing in the plain below. The pilgrims were returning through the valley from the Hurdwar fair, where cholera had broken out. One day at my visit I found three men admitted for cholera and 29 with severe diarrhea. The cholera cases were at once transferred up the Gorge and isolated below our camp there. All the 32 cases received castor oil, and at once the symptoms in all were relieved, and they all ultimately recovered.

During my subsequent career in India I treated, with one exception, all cases of cholera I met with with castor oil, and I can honestly say the mortality seemed lower than those cases treated by others with opium. I treated only one case with opium, which promptly died. This one case, of course, proves nothing, but it

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WASHINGTON

effectually prevented my again resorting to this method of treatment. A great authority on cholera in India, Dr. Macnamara, opposes the theory, and recommends astringents; but be it noted that in a severe attack he himself had he took an emetic and also castor oil, and "so much relief did I experience that I repeated the dose of oil during the following hour." It may be mentioned also here that the Royal College of Physicians some years back, when it seemed likely that cholera might invade England, issued a prescription which consisted of rhubarb as its principal ingredient, in contradistinction to its former views that opium ought to be given. Therefore in my lectures at the Tropical School I always strongly urge castor oil to be administered, and *opium never*.

Passing now to the more recent methods of treating this disease, I would first mention the plan followed by Major Harold Brown, I. M. S. His statistics showed it to be accompanied by much success. During a certain epidemic he gave 10 minims of oil of eucalyptus every quarter of an hour at first, then hourly, in a teaspoonful of milk. For children the dose was 1 to 3 minims. He found the vomiting stopped at once and the diarrhea later. Opium was never administered. The rationale of this treatment was that of destroying the microbe in the intestine.

A method instituted by Col. Aylmer Crofts, I. M. S., I am informed, has been tried with success in India—namely, the hypodermatic injection of bichloride of mercury, $\frac{1}{4}$ gr.; sodium chloride, 1 gr., and water, 10 or 15 m. The sodium chloride is added to prevent ulceration.

Another method that is being tried now in India is by izal. This is said also to be beneficial. Lastly, I come to the most recent method recommended by Major Leonard Rogers, I. M. S., the professor of pathology at the Calcutta Medical School. This officer reasoned that the failure of ultimate success that attended the injection of saline of the usual strength, although the immediate result was good in restoring the circulation and relieving the cyanosis, might be due to diluting the concentrated blood by the *normal saline fluid* (0.6 per cent. NaCl), which had nearly always been used. He therefore used a fluid containing a higher percentage of salt, which would tend to cause the osmotic current to carry fluid into the veins instead of allowing it to escape from them. In other words, he reversed the current. The hypertonic solution employed consisted of 120 grains of sodium chloride, with 3 grains of calcium chloride to counteract the frequent great decrease of blood coagulability, to one pint of water. A single rapid intraperitoneal injection by means of his specially designed instrument of four pints usually sufficed permanently to tide over the stage of collapse, although in some cases it had to be repeated. One hundred and seventy-five cases were thus treated during a very virulent epidemic in 1908, and the mortality, including all the moribund and complicated cases, was only 33 per cent.—but little more than half the rate of several previous years.

So much, then, for the measures to be adopted as regards cholera in some of its curative aspects. I will conclude this paper with a few observations on the preventive side of the disease. First of all, everyone in cholera times should be inoculated. Space forbids me to mention fully the good results of this measure. It will suffice to mention one instance. The statistics regarding Calcutta, Gaya, Cawnpore and Lucknow may be mentioned. Here

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2235 cases were observed, with the following results: Seventeen hundred and thirty-five of the uninoculated had 174 attacks, with 113 deaths. Five hundred of the inoculated had 21 attacks, with 19 deaths, or percentage of cases amongst the inoculated, 42; of deaths, 3.8; percentage of cases amongst the uninoculated, 10.63; of deaths, 6.51.

Secondly, the wells of all villages should be treated with permanganate of potassium. This salt destroys the pabulum necessary for the reproduction of the microbe. We are indebted to the genius of Mr. Hankin, the bacteriologist to the Government of the United Provinces of India, for this method.

To apply this method, two ounces of permanganate of potash in the solid state are put into the bucket of the well, the bucket then lowered and drawn up filled with water. Then stir the water thoroughly and pour the resulting red solution into the well, leaving the portion not yet dissolved at the bottom of the bucket. Again lower the latter, and repeat the process till all be dissolved, lowering, drawing up and emptying the bucket for the purpose. After all has been dissolved, let half an hour elapse, and then draw up some of the water. If a red color be still present, enough has been added; if there be no red color, add some more of the salt. In all cases a faint red color should remain for 24 hours. The substance should be added at night, so as to leave the water as undisturbed as possible. As regards the quantity of permanganate, in most wells two or three ounces will be sufficient. If the well be very foul, as much as eight ounces may be required. If after the required quantity of permanganate an equal quantity of hydrochloric acid be added, the activity of the former will be increased.

Finally, I always recommend people living in a station attacked with cholera either to take a daily "ration" of dilute acetic or hydrochloric acid, or else sulphuric acid lemonade made by adding 15 drops of sulphuric acid to each bottle of lemonade. The rationale of this measure is the following: Some years ago Professor Hay showed by experiment that the cholera microbe can pass through the stomach when the reaction is alkaline, but is killed if it be acid.—*Duncan, in Post-Graduate.*

PRACTICAL POINTS IN THE MANAGEMENT OF POLIOMYELITIS AND ITS SEQUELÆ.

TAYLOR emphasizes the following points in the management of poliomyelitis:

1. The not infrequent occurrence of poliomyelitis in adolescents and adults.
2. The fairly frequent occurrence of abdominal palsy.
3. The uselessness of massage and electricity.
4. The value of rest in bed in the early stage, and of orthopedic and surgical treatment, both early and late.
5. The necessity for a systematic statistical investigation by State societies and boards of health.

Most of the references will be found in the "Report of the Collective Investigation Committee on the New York Epidemic of 1907," published in 1910 in the Monograph Series of the *Journal of Nervous and Mental Diseases*.—*Medical Record.*



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POLIOMYELITIS IN AMERICA—NEW DATA CONCERNING EARLY DIAGNOSIS AND ETIOLOGY—CONSIDERATIONS REGARD- ING TREATMENT.

By Tom A. Williams, M.B., C.M., Edin.,

Washington, D. C

Member Corresp. Soc. de Neurol. Paris. Neurologist to Epiphany Free
Dispensary, etc.

THIS is not yet the time to collate all the observations made upon the epidemic of acute antero-poliomyelitis, which has been spreading from Massachusetts since 1904. But any new fact must be of value in our endeavors to cope with this grave disease, which is far more prevalent than is yet supposed. This year at least a thousand cases have occurred in Pennsylvania. In the District of Columbia the committee appointed to study the outbreak there knows of over 500 cases. Over 8000 cases have already occurred, and well over 5000 of these were in the United States of America.

Early Diagnosis.—To the practitioner perhaps the most practically interesting question is the early diagnosis of this condition from other febrile diseases. Like most zymotic affections, it is most common in childhood, and most difficult to diagnose at that period, until paralysis has declared itself. But as the prognosis regarding full recovery of paralyzed muscles is not favorable, it would be well were we able to diagnose the disease before its invasion has reached the anterior horn and destroyed the cells there or impeded their function sufficiently to cause paralysis. Were we able to ensure a diagnosis thus early, we should be in a better position to estimate the utility of some of the therapeutic measures which have been declared useful, for the disease naturally subsides, as a rule, very soon after paralysis has occurred.

The Prodromal Symptoms.—In the Washington epidemic apathy and great weakness, in some cases, preceded the attack for days. Irritability, perhaps with photophobia, may follow or occur independently. Coryza has been marked in some cases, generally severe ones, and has then extended throughout the period of invasion, but it is not usually a marked symptom. Intestinal trouble appears to have little significance, in view of the fact that epidemics are usually in summer, when diarrhea prevails, and com-

paratively few of the cases are disturbed in the prodromal period. A significant symptom is *insomnia* unaccompanied by restlessness, fever or intestinal intoxication. When weakness supervenes and is followed by restlessness, poliomyelitis may be strongly suspected. If Kernig's sign occurs, especially if unilateral, or, if the deep reflexes diminish, the diagnosis is almost certain if one can exclude other diseases which cause meningitis. When *profuse perspiration* occurs without a high fever, presumption is stronger, and for practical purposes the diagnosis may be made.

Differential Diagnosis: Epidemic Cerebro-spinal Meningitis, The Subarachnoid Fluid.—Of course, until paralysis occurs, epidemic cerebro-spinal meningitis (*diplococcus intracellularis*) cannot be excluded, and it is possible that a tuberculous meningitis may be brooding. But this question is easily decided by lumbar puncture of the meninges, and this should be done rather than lose valuable time waiting for further symptoms. Properly performed, it is a perfectly harmless procedure, and is much less painful than is the injection of antitoxin, for example. It immediately shows us the turbid fluid caused by the *diplococcus*, and guides us to urgently call for serum treatment if that is the disease we find. In poliomyelitis also the fluid contains an increased amount of cells and albumen, but they cannot be seen with the naked eye, for the fluid is clear, but upon precipitation characteristic cytological changes are found.

Findings of the Washington Committee.—Even in the earlier stages there is some pleocytosis. The polymorphonuclears are abundant. It is likely that they originate in the meninges themselves on account of the inflammation there. After a few days these cells are less numerous, and the pleocytosis consists mainly of lymphocytes, with some plasma cells. In some cases mast cells are found. It is phagocytic macrophages which cause the disappearance of the polymorphonuclears. As many as 20 may be found digested in a single cell, where they exhibit pyrominophile fuchsinophile reactions, and may assume forms resembling the Leishman-Donovan bodies found in some protozoan diseases. In the acute phase it is usual to find altered erythrocytes due to minute hemorrhages where the inflammation is intense. Later on altered lymphocytes, *kornchen-zellen*, etc., occur. A moderate increase of pressure is found early in the disease, and there is usually an increase of the protein content sufficient to react positively, both by the methods of Nonne-Apelt and of Noguchi. No bacteria appear in stained preparations. Drs. Hough and Lefora of the Washington committee are of the opinion that these appearances are in favor of the protozoan nature of the virus of poliomyelitis. Their researches will be fully reported in *Folia Neurobiologica*, and along with the report of the Washington Committee.

The examination may be made for clinical purposes by staining with methylene blue the smear from a centrifugalized deposit from the fluid. Enough cells for a diagnosis can be observed in this way,

just as is the case in tabes and paresis. A lymphocytosis with polymorphonuclears during an acute disorder, accompanied by the symptoms cited above, is almost pathognomonic of poliomyelitis.

Differential Diagnosis from Rheumatism.—This error has occurred on account of the severe pain and great tenderness which occur when the meninges are much inflamed. The distinction, however, is quite easy, for in acute rheumatism the joints themselves are inflamed, and hence are hot, red and swollen; whereas in poliomyelitis there is no special heat, redness or swelling of the joints or limbs. Besides, there is always a modification of the reflexes in poliomyelitis, and as soon as the horn cells of any segment are invaded the reflex arising in that segment is first diminished and later suppressed, often several hours before paralysis occurs. When the attack is mainly on the pyramidal fibers, either in the affected segment or higher up in the cord, the reflexes may be exaggerated in that part of the body supplied by those fibers. Again, before the meningeal inflammation has extended to the cord there may be for a time an exaggeration of reflex activity in general, meningismus.

The Fastigium.—In poliomyelitis the fastigium occurs on the second day, when the temperature may vary from 99° to 105° . A little over 101° degrees is the commonest. At this time the face is often heavily flushed. Rigidity of the neck and back may be severe; hyperesthesia and even pain may be complained of, and there may be headache, vomiting, retention of urine and feces.

Lysis is usually complete about the fourth day, and is preceded by paralysis. Those cases which are not paralyzed often remain rigid for some days, walking awkwardly.

Tremor, sometimes unilateral, may be more striking than stiffness or paralysis. It is due to involvement of the rubro-spinal fibers as they pass through the brain stem or cord, where they are situated in proximity to the anterior horn.

The Sensibility.—In the early stages, hyperesthesia is the feature; but when invasion is extensive, hypesthesia may later occur on account of the involvement of the sensory tracts in the lateral columns which convey the impulses of heat, cold and pain. When the meningitis extends to the culs de sac surrounding spinal roots, *stabbing pains* similar to those of tabes dorsalis occur. These are paroxysmal, recurring at various intervals, and lasting from a few seconds to a few minutes. But paresthesia may occur on account of exudates in the spinal cord pressing upon the tracts there. These are not intermittent like the root pains, but may vary in intensity at different times.

Differential Diagnosis.—Poliomyelitis may be mistaken for *typhoid fever*, which, however, should be excluded by the presence of meningeal irritation in most cases. *Grippe* of the nervous form may simulate poliomyelitis, but it rarely shows so pronounced a meningeal reaction, nor irritability of the lower neurones. Moreover, the cases which have catarrhal symptoms are usually so severe as to be easily differentiated from influenza.

Intoxication from the intestine gives rise to a stuporose condition, which may cause fear of a severe poliomyelitis, but the foul-smelling stools and the immediate relief given by flushing of the bowels should exclude poliomyelitis, especially if there is no retention of urine nor meningeal irritation.

Pathology.—The disease is not a primary atrophy of the anterior horn cells from acute toxemia. It is a constitutional disease due to a living virus, which causes an inflammation of the connective tissues of various organs, including the lymph glands and intestinal follicles. It is accompanied, too, by congestion of the spleen and of the mucous membranes.

The meninges are inflamed, and the whole central nervous system is more or less hyperemic. The destruction, however, vastly preponderates upon the region of distribution of the anterior spinal arteries, which supply the anterior cornua, the injury to the motor cells in which produces the paralysis.

Those cells around which the inflammation is not so severe as to produce more than edema quickly recover as the invasion ceases, and account for the rapid return of power in some cases. Other cases where return of power is less rapid are accounted for by the reintegration of a destroyed axone, the pyramidal cell of which has escaped necrosis. In other cases it is the fibers of the pyramidal tract which are mainly involved as they proceed toward the cells in the cornua, which themselves in part escape. Such a case is characterized by exaggerated reflexes, and sometimes by Babinski's toe sign.

Still another set of fibers may receive the chief impact. I refer to the rubro-spinal fibers, which also pass to the anterior cornua cells, through which they regulate muscular tonus. The loss of their influence leads to hypotonia and tremor, without paralysis so long as the pyramidal cells themselves are not implicated.

Of course, the clinical picture may vary in different parts of the body, in accordance with the differing incidence of the inflammatory exudate upon different segments of the cerebro-spinal axis, and in the same segment some cells may escape where others are attacked.

Etiology.—The salivary gland has been used by Levaditi to convey the disease from one monkey to another. In the Rockefeller laboratory they have conveyed the virus by spraying into the nares an emulsion of nasal mucous membrane from a diseased animal. The most infectious material, however, is the spinal cord. The cerebro-spinal fluid is infective only for a few days.

Carriers.—It is believed that the disease may be conveyed by the medium of a healthy carrier (Nebraska epidemic, Dr. C. A. Anderson; Ohio outbreak, Dr. Frost, U. S. M. H. and P. H. Service). Some hold very strongly that abortive undiagnosed cases are responsible for the spreading of the disease so widely. If this is the case, isolation of ascertained cases must be of little avail, especially as there are other facts which seem to point to the superfluity

of isolation as at present conceived against this disease. An instance will make this clear.

Non-contagiousness.—A child aged 11 was attacked with acute paralysis at Bethesda, Md., this summer. She had been playing out of doors all day long for weeks with 17 younger children, seven of whom were own brothers and sisters. All of these were under careful observation by Dr. John Lewis, the health officer of the district, with whom I later saw the case. Not one of these children developed any sickness which would in the least point to poliomyelitis. No contact with another case could be traced, and none of the children had been to town for some weeks. It was the first case recognized at the time in the neighborhood.

Again, in the Washington Children's Hospital, some 25 cases of poliomyelitis have been admitted this summer, many of these in the acute stage. They were placed in the common ward, and at first no special precautions against infection were adopted. No patient in the hospital contracted the disease at that time. Latterly, spraying the nares has been employed, and a certain isolation has been maintained, in spite of which I understand that one case of poliomyelitis developed recently in a child soon after it left the hospital.

I need not instance further, for the number of examples where intimate contact has not led to contagion is legion.

Contagion.—On the other hand, instances where known single contact has led to the disease are not lacking. The Stormsburg (Neb.) outbreak is the most striking example, and another has just occurred, and was observed by myself during our study of the Washington epidemic.

At McKendree, Md., in the practice of Dr. A. H. Perrie, the child of a railroad brakeman became febrile and paralyzed on August 1. Fourteen days before she had visited Chesapeake Beach, to which many Washington people resort. Nine days later this child's cousin was attacked. The contact consisted of a visit to a church fair, where the children were together some hours.

In the meantime the doctor's own daughter, about August 8, was attacked by the disease, and later still another family who had been in contact had one child paralyzed. In the Washington report will appear the full history of the epidemic.

Proper Isolation.—It is manifest from facts of this nature that either (1) the number of immunes to this disease is very great, or (2) that certain bodily states render infection possible, or (3) that the manner of conveyance is very different from that against which precautions are being taken by those who advocate isolation.

Proper isolation would consist of closing of the avenue of infection; and as we do not yet know this in nature, only isolation from everything can possibly safeguard. It is possible that the disease is really conveyed by an insect, either as carrier or intermediate host. No one can forget the complete failure of quarantine to prevent the spread of yellow fever until the false belief that it was carried by fomites was supplanted by the knowledge of its conveyance by the *stegomyia fasciata*. Another instance is the very simple con-

veyance of Texas cattle fever by the *boophilis bovis* tick under conditions formerly thought so extraordinary.

The Treatment (in the Acute Stage).—There are three distinct indications:

I. The first is to preserve life and prevent paralysis. We have as yet no certain means of accomplishing these objects, and the students of immunity are not hopeful of making a serum either to arrest the disease or to prevent its inception. Hexamethylenamine has completely failed to arrest the inflammation in cord and meninges, although it has been thoroughly tested in the Washington epidemic this year. There is, however, a remedy of which we may hope that further early trial will show the use. I refer to mercury, the power of which over some infections has become better realized since it has been employed by injection into the muscles or veins.

A Case.—I have, however, only had opportunity to test it in one case of poliomyelitis during the acute phase. It was done because of a sudden advance of acute ascending paralysis in an adult who had apparently improved on the preceding day, the fifth of his disease. By lumbar puncture also, 10 c.c. of cerebro-spinal fluid were withdrawn. Headache and nausea were at once relieved, and the paralysis ceased to progress, while the temperature fell steadily. During three days five doses were given of mercury bichloride of gr. one-third and one-quarter alternately. In another case of the same kind with which I was associated the remedy was not tried, and the disease progressed to respiratory paralysis and death on the fifth day. Both these cases were adults seen in consultation, the first with Dr. John Lewis of Bethesda, Md., the second with Drs. A. B. Hooe and Roy of Washington. It is true that the injections would perturb a child who is hyper-excitable from meningitis. But a temporary disturbance is preferable to paralysis or death, and much less pain is produced by the small needle used than by the injection-syringe needle required when diphtheria or meningococcus disease are in question.

If the disease is protozoal, the rationale of mercury is evident, and it is possible, too, that some arsenical derivative may be applicable.

Many have recommended cupping and other derivatives to prevent spinal hyperemia. The rationale of this is at least doubtful when we reflect that the hyperemia is Nature's defense against further invasion.

Special indications are: The constipation and retention of urine, which should be met by copious enemata, and not by drugs to stimulate peristalsis, which is deficient not because of local toxins, but because of interference with innervation at the center. Sometimes a catheter is required, but usually a flow from the bladder will follow a third or fourth enema, the first, indeed, often failing to expel any feces.

II. *The Pains.*—The second indication is to minimize the pain and irritability of the attack and to secure rest and sleep. The

warm bath or wet pack is most efficacious in some cases. It not only acts as a revulsive to soothe the nervous system and tranquillize the circulation by its warmth, but it has the mechanical function of supporting the limbs so evenly that there is no drug to stimulate afferent nerve impulses to add to the irritation due to the meningo-myelitis. Other measures which secure the same end are water or air bed; maintenance of the limbs in a semiflexed posture by soft pads, and support of the feet by a firm one. Support of the back by a firm cushion, well warmed and not too hard, gives great relief, and the proper adjustment of the pillow under the neck is of great importance. An ice cap sometimes causes great distress, and its use has no justification except the thoughtless routine of orthodoxy. An immobilizing jacket has been of great service in giving comfort to some little patients. It should be used always during the acute phase when pain is severe.

Galvanism.—Finally, after the inflammation has subsided, usually in about a week, galvanism should be used as a direct means of diminishing the pain which is derived from the stretching and sagging of joints, ligaments and muscles caused by the loss of tonus in the muscle groups paralyzed, sometimes aggravated by hyper-tonus of antagonists not paralyzed. The relief given in this way is surprising to those who have not tried it.

A Case.—One adult case, seen with Dr. Ammerman of Washington, would gain a tranquil repose of over two hours after half an hour's application of galvanism to his paralyzed muscles. At other times restlessness and pain were so great that only by morphine could he secure any sleep at all, and his day was a perpetual misery. The hot bath was unavailable at that time.

III. *Treatment of Residual Paralysis.*—Little children are reluctant to essay movements of a partially disabled limb. When it is an arm they let it hang and use the other; if it is a leg they make no effort, and prefer to be nursed and waited upon. Suspension in water greatly facilitates movement when the muscles are feeble. We in Washington can fully confirm the experience of the New York Committee, who found out how easily a child in a bath could accomplish little movements which he was unable even to attempt when his limb was not so supported, and it is very easy for the mother or nurse to invent little play-games to maintain the child's interest for an hour at a time while suspended in a warm bath. There is no danger in this so long as the water is maintained near blood heat. The skin does not macerate, and the effect upon nutrition is most favorable.

To stimulate the circulation in the limbs they should be gently massaged several times a day.

Galvanism.—But from the foregoing procedure one must not expect to procure regeneration of atrophied muscle or nerve. Surgeons know well that the muscles supplied by a cut nerve atrophy and will not regenerate, although they are massaged till doomsday. If, however, they are galvanized from the beginning, atrophy will not occur, for the exercise of their contractile functions maintains

the integrity of the muscle elements, and it is only galvanism which can excite contractility when the motor nerve and its endings have degenerated. If treated by galvanism from the beginning, a living muscle cell will greet each regenerated nerve fiber which pushes to its destination. If galvanism is not used, the envelopes of only dead muscle-spindles will be met with. The time for these to re-grow must be added to the duration of every case not treated by galvanism. It is necessary to restate these simple physiological facts on account of the vogue of the pernicious statement that no treatment of poliomyelitis should begin until four months have elapsed. This doctrine is another instance of unthinking orthodoxy. But if the elementary physiological considerations just presented make no appeal, I need only cite the high authority of Erb, Bergonie, Zimmern and Zappert, the distinguished Viennese pediatrician (added to that of Duchenne's final experience), who make a practice of galvanizing the paralyzed muscles just as soon as the acute symptoms subside.

Mode of Application.—The current should be applied only to those muscles which are paralyzed, and the negative pole should be placed over the muscle itself near its tendon of insertion, while the positive pole should be attached to a large electrode applied over the abdomen or other indifferent point. It is useless to stimulate the motor point except during the first two weeks, i. e., before nerve endings have ceased to be stimulated on account of degeneration.

Of course, contractures and other deformities should not be permitted, and even when paralysis is complete and irrecoverable, they can be mainly prevented by the maintenance of proper posture. Orthopedics is the resort of despair, and the result of neglect of proper and early treatment, but the weak muscles may be reinforced with advantage by elastic suspenders.

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By De Forest Willard, A.M., M.D. (University of Pennsylvania). Ph.D. With 700 illustrations; 806 pages octavo.
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It is evident that the author of this book was more familiar with the conditions included in the subtitle. The chapters on orthopedic surgery are the only ones in the book that deserve commendation. The work of the author in the Widener Industrial School for Crippled Children and the Orthopedic Clinic of the University Hospital is shown here, and his valuable experience made useful for others.

In these chapters the illustrations are often original, and generally both good and pertinent, qualifications that cannot be applied to many of the pictures in the book.

FREQUENCY, DISTRIBUTION AND IMPORTANCE OF HOOKWORM DISEASE IN NORTH CAROLINA.*

By *Watson Smith Rankin, M.D.*,
Secretary State Board of Health, Raleigh, N. C.

Frequency.—As hookworm disease is a close, if not an invariable, associate of a particular climate and a filthy custom, and as both custom and climate affect large numbers of people, we may expect to find uncinariasis a prevalent disease wherever it occurs at all. Hence we find its frequency in the different countries from which it has been reported ranging from 13 per cent. in Kyoto, Japan, to about 90 per cent. in Egypt and Porto Rico.

While the investigation of the frequency of the disease in North Carolina has not yet gone far enough to justify absolute conclusions, there is enough reliable statistical data to bear out the statement made, independently, by Stiles and Harris in 1902—that hookworm disease is, by far, the commonest and most important disease of the South.

The work of Nicholson and Rankin, carried on in 1903 and 1904, and published in the *Medical News*, shows 52 college students out of 140 examined, or 37 per cent., to be infected. Here it may be well to explain that the students for the examinations were not selected by their physical appearance. Counties from different sections of the State were chosen, so that an idea of distribution as well as frequency could be arrived at, and having taken a certain county, every student from that county, regardless of his physical appearance, was examined.

A similar examination of the students of two colleges of the State has recently fully confirmed the findings of Nicholson and Rankin in 1903 and 1904. When it is seen, as will be later shown, that the college student's age distance from the barefooted period of life makes the disease far less frequent in this class than in those under 15 years of age, we realize that the student falls short as an index of the real frequency of the disease. I hesitate to be as specific as I could be, because of the difficulty the profession has in keeping the scientific and life-saving facts until the time is ripe for their delivery, and because, if delivered immaturity, some sensational correspondent may make invidious comparisons that hamper or paralyze some of the much-needed co-operative forces in public health work.

Distribution—Geographical.—In the investigation already referred to students from 25 counties of the State were examined. These counties were so selected as to indicate the distribution of the disease in North Carolina. There are recorded cases from three other counties of the State. It is to be found in the flat, sandy, piney woods counties of Eastern Carolina; in the rolling foothills of the Piedmont section, or Central Carolina, and in the mountain counties of the "Land of the Sky."

*Read before the annual meeting of the Medical and Chirurgical Faculty of Maryland April 27, 1910.

There is this difference in the geographical distribution: In the eastern counties the disease is certainly more severe, and, very probably, more frequent than in the western counties.

Geologic.—It is most frequent on a soil composed of an upper layer of fine, gray, compact sand, with a substrata of clay about six or ten inches below the surface. Another soil that seems favorable is the loamy, fine, sandy soil; that is, a fine sand mixed with much decaying vegetable matter. Here we may have no clay subsoil. It has been interesting to observe its almost entire absence on a soil made up of coarse sand, six or eight feet deep. We account for this distribution on the biological requirements of the parasite. On the first two of the above soils you have a structure to hold moisture; on the last, rapid drying and death of the parasite.

Racial.—Of 147 cases studied by Nicholson and Rankin, all were white. Dr. Nicholson, with a country practice, 50 per cent. of which were negroes, went to considerable pains to find the disease in that race. Only one negro was found with suspicious symptoms, but microscopic examination of his stool was negative. Some have held that the infection is just as frequent in the negro as in the white, but that symptoms are absent in the negro on account of a relative immunity; or, in other words, the relation of uncinariae to the negro is the same as the relation of the tricocephalus dispar to the white—he harbors the parasite, but is unaffected pathologically by it. Our experience does not accord with this view. We believe that when the two races are together that the disease is far more frequent in the white.

Age.—Hookworm disease is a disease of the barefoot period of life. Comparatively rare under four years, because, although the child is barefooted, it runs about the infected premises comparatively little. Much less frequent and continually declining in severity after 15 years, because, at that age, as a rule, children cease to go barefooted in the summer, and the worms, having a longevity of from five to eight years, gradually die out. The following table, from 85 cases, shows very well the age distribution:

Under five years there were.....	5 cases
Between fifth and tenth year.....	14 cases
Between tenth and fifteenth year.....	28 cases
Between fifteenth and twentieth year.....	15 cases
Between twentieth and twenty-fifth year.....	9 cases
Between twenty-fifth and thirtieth year.....	2 cases
Between thirtieth and thirty-fifth year.....	4 cases
Between thirty-fifth and fortieth year.....	1 case
Between fortieth and forty-fifth year.....	0 cases
Between forty-fifth and fiftieth year.....	3 cases
Between fiftieth and fifty-fifth year.....	0 cases
Between fifty-fifth and sixtieth year.....	1 case
Average age of onset, seven and a half years.	

Under 10 years of age 70 per cent. of our cases were infected.

Residence.—Uncinariasis is a rural, and not an urban, disease. Of the 147 cases studied in 1904, all but nine lived in the country

at the time of examination. The nine others had lived in the country. It may occur in the urban resident, but almost invariably close questioning will bring out the fact that the victim has visited extensively at some time during the previous five years in the country.

Family.—Of 70 cases in Dr. Nicholson's practice, 39 families were represented. These families numbered a total membership of 280. Of the 280, 32 per cent. have been microscopically diagnosed, and 25 of the remainder clinically diagnosed uncinariasis. Again, it has been noted that it seems to be a family trouble from generation to generation. Furthermore, the large number of aggravated cases, seen in certain families, would seem to indicate that prolonged and intimate association with a soil intensely contaminated is an etiological factor of great importance.

Sex.—The disease seems to be slightly more prevalent in the male, perhaps on account of the generally less cleanly habits of the male.

Relation to Probable Etiological Factors.—The 147 cases carefully studied showed no etiological relation to drinking water or dirt-eating. All cases, save one, had suffered from ground itch, and this, with other factors, forces us to believe that skin infection is by all odds the most important route.

Importance.—The importance of the disease rests upon its great frequency and its far-reaching effect. As the frequency of the disease has already been as definitely gone into as circumstances will permit, it only remains for us to consider the far-reaching effect of the disease. In doing this the first point of importance is the time of life at which it fastens upon its victim—the formative period of existence, when influences, good or bad, are most pronounced in their effect. Example: Male; age, 21; weight, 105 pounds; frame, proportionately small; work, as student, medium; a fellow with an 80 mark. Father of patient, weight 200 pounds; mother of patient, weight 160. Patient is entitled by laws of heredity to a large body. No other cause brought out in history of patient to account for dwarfism, except uncinariasis, which history shows is of 16 years' duration. Question: If this disease so affected the epithelial, muscle, and connective tissue cells as to permit of not more than a 75-per-cent. development, how much more has it affected the more highly-specialized and sensitive central nerve cell? This is but one of myriads of similar cases in my State and in the South. When we recall that the finer and rarer qualities of the mind—originality, inventiveness, foresight—are attained in a degree proportionate to the height of the development, we begin to realize the blight of the *necator*. The loss of productive energy from uncinariasis, its monetary value, has not been definitely calculated, but when it is known we may be sure it will test the credulity of those of us who have been accused of exaggerating its importance.

As a *direct* cause of death in North Carolina and the South, it is very rare compared with the number of those who have it. My ob-

servation of the disease would indicate that 85 or 90 per cent. are doing some kind of work, and are not receiving medical attention; that 10 to 12 per cent. are almost totally incapacitated, and are receiving some medical attention; that not more than 2 or 3 per cent. of the victims die of the disease. The indirect effect of uncinariasis, its rôle behind the scenes, its tendency to open the portals of infection through lowered resistance to various invaders, such as the tubercle bacillus, the typhoid bacillus, the pyogenic cocci and others, usually places its victim in that group that "rarely die of the disease with which they suffer."

DIAGNOSIS AND TREATMENT OF DISEASES OF WOMEN. By Harry Sturgeon Crossen, M.D., Professor of Clinical Gynecology, Washington University. Illustrated. St. Louis: C. V. Mosby Company. 1910.

The second edition of Prof. Crossen's work is devoted exclusively to the diagnosis and treatment of diseases of women. The work contains over 900 pages, of which more than 300 are given to diagnosis. This part of the book is top-heavy with illustrations which do not add any great value to the work. The latter part of the book abounds with good common sense, combined with just enough theory to make it a most useful text for the practitioner and student. The author throughout the work has presented the important points so clearly and systematically that they may be readily understood and retained.

In the chapter on local applications to the external genitals, vagina and cervix, the author is to be congratulated on the stand he has taken against vaginal douches as a routine treatment for all women under all conditions. He properly advises that vaginal douches should be used only when there is some definite indication for them, and that the routine practice of douches in healthy women for indefinite periods should be discouraged.

The treatment for gonorrheal infections of the vulva, urethra, vagina and uterus is truly ideal, and is not equaled in any other book on the treatment of diseases of women.

As this book is not intended to be an operative gynecological work, no great space is devoted to detail technical descriptions of major operations. In the treatment of the various conditions where operation is required the author has concisely described the kind of operation called for by the particular condition present, what the operation is intended to accomplish, the preparation of the patient for the operation and the after-care.

The chapters on pelvic inflammation and tubal pregnancy have been given special attention and brought up to date. The last chapter in the book is on medical-legal points in gynecology, and is a very valuable addition to the work.

On the whole, the book is one of extreme value to the practitioner and student, and may be well recommended.

THE WHYS AND WHEREFORES OF TUBERCULOSIS IN OUR STATE PRISONS.

By Theodore Cooke, Jr., M.D.,

President of the Physicians' Section and Director of the American Prison Congress.

THE gradual elimination of this great scourge from the community has been due to the activity of the medical profession in the education of the people as to the great danger of contagion from this disease. Tuberculosis has been recognized as the scourge of prisons from time immemorial. Yet much has been accomplished in the eradication of this disease from our penal institutions in the past twenty years.

In Maryland there have been four factors that have interfered with this object, namely, (1) The desire to make the penal institutions paying investments to the State; (2) Discipline; (3) Precautions against the escape of the prisoners; and (4) The stupidity and arrogance of those in charge of our penal institutions—refusing to keep abreast of the times and standing in the way of all reforms. I am in a position to show how each of these factors have been overworked in Maryland, and that other factors that have been utilized in other States with such great success in the reformation of the prisoner have been side-tracked in Maryland lest one or the other of the predominant factors would be interfered with, leaving Maryland away behind the times in her handling of the criminal from a reformatory standpoint. But this is not the province of this paper. In the study of tuberculosis in the prison population of Maryland I shall endeavor to show that these predominant factors are standing in the way of the proper handling of the prisoner, making him more liable to the invasion of the tubercle bacillus, and making our prisons pesthouses rather than safe homes for the reformation of our criminal classes.

The desire to make the penal institutions paying investments to the State results in the development in those in authority of a mania to save money at any cost. The result is that the food supplied to the convicts in the penitentiary has been far below what it should be; meat bought at 4 35-100 cents a pound during the year 1909-10 is not meat at all, but bone and tendons. Beans bought with shells cracked, which have to be ground up to be cooked, is not starchy food supplied the system, but the food in the beans has spoiled, due to the lack of a proper shell. Flour which takes three and four hours to bake, and then mould appears on the inside, and when the bread is rolled in hand after baking it forms a ball capable of bouncing four and five feet, is not the proper diet to keep the convict in a condition of good health which is so essential for his reformation. In fact, it has been shown before the May term of the Grand Jury, through witnesses whose disinterestedness could not be questioned, that inferior products were bought in the food

line for this institution. Proper clothing and bedding have not been supplied to the convict, due to the desire to economize. Paraphernalia that should be supplied by the State is not forthcoming, with the result that the surgeon of the penitentiary has spent part of his salary in instruments, as microscopes, X-ray, etc.

The desire to make a surplus results also in those in authority fearing that the convict is faking; of all monstrosities, this word is the most abused and the most serious used in penal work. Every time a man is sick he is a fake. Why? Because he has to be laid up, and consequently interferes with the process of surplus accumulation, as every day he is laid up in the hospital means 50 cents off the surplus. Then, the doctor may be foolish enough to order something extra for him. My experience with the criminal classes is that they very rarely fake. I believe when you cannot prove a prisoner a maligner, you have no right even to charge him with it, but to carefully watch him and look out for incipient trouble. I feel that it is far better to have ten maligners than to mistake an incipient trouble for a faking condition. This question will be further considered under the last heading.

The discipline of a penal institution is a very important factor, but when those in authority cannot manage their institutions except by lowering the vitality of the convicts intrusted to their care to such an extent that they are liable to the invasion of disease, then it is well to look around and see if there are not better methods of treatment. Maryland admits the use of the dark cell, and while in the dark cell a diet consisting only of bread and water. The result of this punishment is that the prisoner, who usually has not the mental and physical stamina to meet the requirements of the contract to which the State has leased him out, is shut off from light, usually 10 days, thereby rendering him or her liable to the invasion of disease, especially tuberculosis, and, his or her vitality being further lowered by being placed on bread and water, he or she comes out of the dark cell much less capable of performing the task than when he or she went in, with the result that he or she is liable to a second visit to the dark cell in a very short time. The effect on a prisoner of the dark cell is no better illustrated than in the following five cases that were in the female hospital of the Maryland Penitentiary during the month of April, 1910:

No. 1 was put in the dark cell December 29, 1909. I took her out of dark cell January 4, 1910, with temperature of 103°. Subsequently she had pleural pneumonia, a pleural effusion, acute nephritis, tubercular cervical gland, swelling in the region of the first lumbar vertebra and slight paraplegia. When I was locked out of the institution on the 28th day of April she was walking around and much improved.

No. 2.—Her short time had expired and she was to be released, but, due to the fact that she had played a nasty trick on a fellow-prisoner, she lost her time and was locked up in the dark cell for 10 days. A few days after her release from the dark cell she was

taken to the hospital with a pleural pneumonia; drew a pint of fluid twice from pleura; tubercle appeared in sputum, and was running a rapid course when discharged from the institution after the full expiration of her sentence. Died a short time afterwards at Bayview.

No. 3 was in dark cells often and had been warned by me to behave herself lest the dark cells would kill her. Was taken to hospital in April with pleural pneumonia; tubercle appeared in sputum; died in October of tuberculosis.

No. 4 in dark cells from 4th of March to the 7th, and taken out at my request. Short time after release from dark cells, taken to the hospital with acute nephritis, running high temperature, many granular casts and much albumen.

No. 5 in dark cell from the 25th of February to the 7th of March. At my request, taken out of cells. A short time after release from dark cells, taken to hospital with lobar pneumonia; tubercle appeared in sputum; much improved.

In the study of these cases it must be remembered that there were only 75 female prisoners in the institution, and five of these were in the hospital during one month from one cause, the dark cells. Of these five, two have died and three had narrow escapes. Certainly there is something wrong in this mode of punishment.

Surely, the physician of a penal institution should have a say as to the punishments administered in that institution. Further, no prisoner should be punished until the physician has examined him to see if he is capable of receiving the prescribed punishment. The last Grand Jury of Baltimore City protested against the custom of whipping, cuffing up and the method in use known as the monkey.

The precautions against escape have been so great in the Maryland Penitentiary that the sick prisoner with a long sentence is restrained by being placed in iron cages in the hospital, and the surgeon of the institution is made to keep him there. Cases of typhoid fever, tuberculosis, pneumonia, must be handled in these steel cages, which are great conductors of heat and cold, thereby lowering the vitality of the prisoner. Furthermore, the great reason advanced for building the new penitentiary in Baltimore was the fact that it would be safer. It was thought to be safer to place a certain number of cells beneath the surface of the street. Likewise, the steel cell was thought to be safer than the concrete cell, though the steel cell was a great breeder of bugs and germs in its crevices, and a great conductor of heat and cold to and from the body of the convict.

The last factor, the stupidity and arrogance of those in charge of our penal work—refusing to keep abreast of the times and standing in the way of reforms, is a very important one in Maryland. Those in authority in Maryland in our penal institutions have kept aloof from intercourse with their fellow workers in other States, never attending the prison congresses (Warden Hook is an exception), though they are held as near as Washington, and

though they had been appointed by the Governor as official delegates to the congress. The warden of the Maryland Penitentiary has said that he does not attend these meetings because he cannot learn anything from them (he knows it all), with the result that he does not appreciate what advances are being made in other States. The only way he has to be informed is through the press or magazines. He has no personal contact with other officials, no heart-to-heart talks. The result in Maryland is that the various institutions are not abreast of the times.

The warden of the Maryland Penitentiary having so successfully impressed on the community his usefulness by the strict application of these four predominant factors in the management of the penitentiary, has been imitated by the other institutions, and we find that the same strictures that are charged up to the Maryland Penitentiary apply to a certain extent to the minor prisons in Maryland. The man who has thus been placed at the head of the penal system in Maryland is a politician who is useful to the powers behind the throne, and through them has been able to ward off investigation of the penal system of Maryland in the vain hope that something will turn up to discredit my report. He has openly expressed his contempt for educated men, holds their views up to ridicule, and has even declared that he is more capable of directing medical questions than those who have been trained in these lines. When I advocated a proper receptacle for the reception of the sputum of prisoners throughout the institution along in 1897, and the proper cleansing of the same, I was ridiculed, though when I placed it in my report as an accomplished fact, there were placed three wooden boxes in the yard, filled with sawdust, which was changed every month or so. When I advocated the institution of regulations against spitting on the floor and the placing of proper placards, my suggestions were not well received, as the head of the institution is a great expectorator, and enjoys depositing his sputum wherever he pleases. When I advocated the regular flushing of the yard, the cost of the water was an obstacle, and when the city charged a lump sum for its water, due, I think, probably to my protest to Dr. Jones, the State did not have the men with which to wash up the yard. When I went to the American Prison Congress in 1902, and came home more impressed with the harmfulness of the dark cells and with the fact that we were not treating our prisoners properly in the Maryland Penitentiary, the warden said I came home with foolish ideas and that it was well to keep away from these meetings, which I did until 1908. At the time I advocated the sterilizing of the water and the screening of the windows in the kitchen to protect the food supply, when a member of the Board had inquired of me if the Board could help in suppressing an epidemic of typhoid fever in our institution, I was ridiculed and my proposition was pronounced impracticable by the warden. When I insisted upon taking care of the incipient cases in the penitentiary, the head of the Maryland Penitentiary told me and other

people that "the prisoners were fooling me, that I was too easy and that *I was suggesting disease to them*," especially tuberculosis.

When I delivered an address* at the National Prison Congress held in Richmond in 1908, which address was well received, as seen by the printed discussion in the Report of the Proceedings of this Congress, and by the report of Chaplain Treibeau of the United States Navy to the Judge Advocate General of the Navy, and by the report of the New Jersey delegates to the Congress to Governor Fort of New Jersey, the warden of the Maryland Penitentiary became greatly excited and enraged in regard to the same, extracted the following sentences from the address: "All prisoners should be examined and vaccinated by the physician of the institution and disposed of as their physical and mental development calls for, * * * the physician should investigate all complaints of the prisoner, * * * the punishment for infraction of the rules should always be approved by the physician, * * * when corporal punishment is inflicted the physician should examine the convict, both mentally and physically, to see if he is capable of receiving it, * * * the food supply should be absolutely under the care of the physician, * * * the physician should see that the food is varied, wholesome, nutritious and plentiful, and that all the elements that go to sustain life and retain health are supplied the prisoner, * * * the physician, or a body of physicians, should be consulted as to the sanitary arrangements and construction of new buildings, * * * the location, architecture, elevation and material of construction of these buildings" being, "carefully considered, as they have an important bearing on the health and mental development of those under confinement, * * * all matters pertaining to the prevention and cure of diseases should be absolutely under the care of the physician, * * * in this department he should be supreme and brook no interference, * * * the physician of the institution for the reformation and correction of the criminal classes should * * * take care of the criminal after trial in the various institutions for the reformation and correction of prisoners, * * *" the aforesaid matters having been points of controversy between the warden and myself, and wrote: "I cannot, try as I will, but see hidden in the language of the address a covert attack, and veiled stricture against myself." A perusal of the address will show that the warden of the Maryland Penitentiary has placed himself in a very ridiculous position, as nobody but a very narrow-minded and jealous man could take such a stand.

My effort was always directed to educate the warden to the fact that it was not desirable to keep tubercular patients at work until within a month or so of death; that it was better to take care of the prisoner when he first showed irregularities in health than to wait until later, and that it was more important to have a low death rate than to show the healthy condition of the convicts in the peniten-

*"The Position the Physician Should Occupy in the Trial, Sentencing and Care of the Prisoner." American Prison Congress Report for 1908.

tiary by having only a few sick in the hospital. I am informed that tubercular patients are dying in the penitentiary at the present time when they have been in the hospital about two months. Further, I endeavored to get him to accept ideas by declaring them accomplished in the Maryland Penitentiary.

On a visit to the House of Correction in 1909, along with Dr. Herring, I was much impressed with the fact that proper protection from tuberculosis was not being observed, the doctor not making daily calls on the five or six hundred prisoners of that institution, the salary being too small; the tubercular patients associating with the other sick prisoners, no officer being in constant charge of the hospital, and no provision being made for the sputum of the tubercular patients. It was suggested to the warden that a few photographs of the hospital would lead to the building of a new hospital, but the offer was declined.

I have advocated locally,[†] nationally,[‡] and internationally[§] that prisoners charged with crime should not be tried when impaired mentally or physically; that it is a duty the State owes the community and the prisoner that the prisoner so afflicted be taken care of by the State and cured before trial, and that after he is cured, if the State thinks the case deserves punishment, he could be tried. I have further advocated that the diet at all times should be wholesome, nutritious and plentiful, and that when the prisoner first begins to complain, he should have medical supervision, and that he should not be required to work when his condition does not justify it. Furthermore, I have advocated and attempted to act on this principle, that the convict in our institution who is sick should get everything that would be conducive to his health. Further, that the State should take care of the convict, when health is impaired, and not throw off the responsibility by pardoning him. To my mind, the tubercular convict should be better taken care of than the tubercular freeman, as he is just as great a menace from the standpoint of contagion, while he, not being able to make a living, is more liable to return to his old habits, and thus menace the community. I made it a custom, when asked by the Governor as to the desirability of a pardon of tubercular cases, not to recommend such pardon except when I knew the convict was hopelessly involved and only had a short time to live. Extracts from two reports on tuber-

[†]"Should Persons Deficient, Either Mentally or Physically, Be Tried in Our Courts of Justice?" *Maryland Medical Journal*, April, 1908.

Annual Reports of the Directors and Warden of the Maryland Penitentiary for 1907 and 1908.

"A Few Suggestions to Help Maryland in Handling Her Criminals." Fifth Maryland Conference of Charities and Correction Report, 1909.

[‡]"The Position the Physician Should Occupy in the Trial, Sentencing and Care of the Prisoners." American Prison Congress Report for 1908.

"The Advisability of Laws Making It Compulsory that Every Prisoner Charged With Any Offence Against the State in Any Court of Justice Be Examined Before Trial by a Physician." American Prison Congress Report for 1909.

[§]"What Means Are to be Taken for the Repression of Vagabondage and Mendicancy, Taking the Point of View of Modern Criminalists?" International Prison Congress Report for 1910.

cular prisoners to Governor Crothers explain my position very clearly.

Report of Dr. Cooke to Governor Crothers June 17, 1909, as to John J. Caulfield:

"* * * He has not gained as those who recover do, and would give unfavorable prognosis. Would recommend a pardon providing assurances are given as to proper care of Caulfield and proper protection of community from his sputum."

Report of Dr. Cooke to Governor Crothers February 1, 1909, as to William Proctor:

"* * * I would say that Proctor would be better taken care of, and the prognosis in this case would also be better if left for the present in our institution than if he was permitted to leave.

"At present everything points to his ultimate recovery; therefore I deem it best for his interests for him to remain in this institution in order to receive the treatment, which has been so beneficial in his case."

Further, I have advocated that the State establish tubercular and insane hospitals for the care of the tubercular and insane prisoners, and that all prisoners so afflicted should be sent to these institutions, and not left in our penal institutions to be a menace to their fellow-prisoners while in confinement, and a greater menace to the community when they were released.

In closing I desire to impress on the medical profession of Maryland that whatever advances have been made in Maryland in the treatment of tuberculosis in our prison system have been accomplished by overriding the four factors that have been shown as the causes of tuberculosis in our State prisons. During the period these factors were being overridden the mortality of the penitentiary fell from 22 in 1907 to 12 in 1908 and 7 in 1909, while in 1910 the warden of this institution, though he had invariably commended me for my work, except in 1909, when I had thus reduced the mortality of this institution, determined to get rid of me because, perhaps, of my overriding these four factors, and perhaps because of the prominence I was acquiring in the penal world, with the result that the mortality of the penitentiary has been, during the present fiscal year to date, November 18, 1910, 16 deaths. Further, that criminology is making great advances in other States, while in Maryland we have been laggards for 20 years. Likewise, a politician is not the proper man to dominate this work if the community is to be properly protected from the criminal classes. To have Maryland stand out as a State abreast of the times in penology, as she is in other fields, it is requisite that at the head of the penal system of Maryland there should be a broad-minded, liberally-educated man, capable of keeping abreast of the times, willing and anxious to keep in direct contact with the work in other States, capable of recognizing and utilizing advances in penology as they are presented, and capable of educating the people as to these advances.

EHRLICH'S "606."

By A. Samuels, M. D.,

Associate Professor of Gynecology, College Physicians and Surgeons, Baltimore, Md.

THE discovery of "606" is the outcome of the labors of Dr. Ehrlich. For a long time he had been engaged in an effort to discover some chemical substance that would prove of value in the treatment of those infectious diseases caused by animal parasites, which apparently cannot be destroyed by the supplying of specific antibodies.

Dr. Ehrlich, from previous investigations, had found that it was not safe to attempt to destroy animal parasites by means of small doses of poisonous substances for the reason that the parasites often develop a toleration for the substance which they transmit to their progeny. All of these chemical substances are more or less poisonous, attacking the protoplasm of the parasite as well as the organs of the body. Therefore, for a substance to be of therapeutic value in the treatment of those diseases caused by animal parasites, it must not be poisonous to the patient in doses required to kill the parasites.

With the discovery of the transmissibility of syphilis to the lower animals and of *treponema pallidum*, the parasitic cause of syphilis, these new drugs could be tested against the *treponema pallidum* in rabbits.

Through the aid of modern synthetical chemistry, he was able to prepare an almost unlimited number of combinations.

Among the many hundreds of synthetical combinations made and tested, it was found that the dioxydiamido arseno benzol would quickly kill all the spirochetæ in rabbits and was harmless to the host. To make it possible to introduce this remedy in the treatment of pathological conditions in man, Dr. Konrad Alt of Uchtsprunge, made many experiments on paralytics and proved that the substance did not exert a poisonous effect in man in doses of from 0.3 to 0.5 gramme. Iverson, about this time, reported gratifying results in recurrent fever. Schreiber observed that the symptoms of human syphilis disappeared very quickly under treatment with the drug.

The substance "606" is chemically dioxydiamido arseno benzol; the active principle is arsenic and the other chemical groups present merely serve the purpose of fixing the base to the parasite. It is a yellowish powder which oxidizes on exposure to air, and forms a very poisonous substance. Hence, it is put up in vacuum tubes. It dissolves in water with difficulty, making a strongly acid solution. As the acid solution is very painful, it is best administered as a neutral base. Wechsleman prepares the substance for injection by rubbing it in a mortar with 1 to 2 c.c. of sodium hydrate solution; then adding acetic acid drop by drop until a fine yellow paste is precipitated. This precipitate is made sterile and rubbed in 1 to 2 c.c. of sterile distilled water, and precisely neutralized to litmus with

0.1 normal sodium hydrate if acid, or a one per cent. acetic acid solution if alkaline. The precipitate in suspension is then drawn into a 5 c.c. syringe and injected subcutaneously either below the shoulder blades or in the gluteal region, the skin previously having been cleansed and disinfected.

Effects of the Drug.—The effects of the drug may be divided into those arising from the introduction of the compound into the system which are both local and constitutional and the effects of the drug on the pathological conditions caused by the animal parasites.

Results, locally. If the solution was precisely neutral, little or no discomfort was noted, severe pain only following in those cases when the solution was acid. In one patient, however, at the Virchow Hospital under the care of Dr. Wechselman, who suffered severely after the injection, it was necessary to administer morphine. A slight swelling generally arises on the second or third day following the injection. With the exception of one or two cases, the swelling subsided quickly. In one case, quite an induration appeared in the gluteal region which went on to abscess formation.

Constitutionally. A rise in temperature is generally noted. In some patients the temperature may reach 105, especially in those who seem to have an arsenic idiosyncrasy. An urticarial eruption has also been noted.

In view of the experiences with other arsenical preparations, fear was entertained for the optic nerve, therefore, every patient has his eyes examined by a specialist before an injection is given. In cases in which there were changes in the optic nerve, injections were not given. Ehrlich claims from later experiments on animals that a toxic influence on the optic sphere is not very probable. Clinical observation at the Virchow Hospital seems to favor the opinion that "606" can be used even in cases of diseased optic nerve. For instance, in one patient whose eyes had not been examined, after the injection it was found that the optic nerve on each side had a dim margin and was venously hyperemic (neuritis optical). On investigation it was found that she had been treated by inunctions of mercury and had at that time a dim margin. The patient remained without any pathological affection of the fundus oculi and retained her full vision (Dr. Fehr).

Of the number of patients that I saw treated at the Virchow Hospital, ocular affections were not observed and Wechselman expressed himself by saying he did not believe it injudicious to use "606" when the retina is affected. However, he always has the eyes, heart and kidneys examined by a specialist before giving them an injection of "606."

The Effects of "606" in Syphilis. So far, Wechselman has treated over 700 patients, and during my stay at the Hospital, I saw about 40 patients treated. The results obtained from the injections in these 40 patients correspond in general to the results obtained from the sum total treated by Wechselman. From 12 to 24 hours

after an injection, erosive chancres become clean and rapidly heal; in pronounced sclerosis, the cleaning process is of the same rapidity, but absorption takes longer. I understand that in four cases there appeared, after healing of the primary lesion, an exanthem which disappeared spontaneously in two patients in whom it appeared on the first and seventh day after the injection; the other two patients received a second injection. Mucous patches of the month heal in from 24 to 48 hours, even in patients who are inveterate smokers. The roseola disappeared in a few days. Malign ulcerous syphilides, rupia, watery pustules and small papulous syphilides are slower in their disappearance and a second injection sometimes becomes necessary. The night pains so common with syphilis of the bones disappear with great rapidity; Wechsleman explains the sudden stopping of the pains to the killing of the spirochetæ. Visceral lues show quick recovery, especially syphilis of the testicles. A case of long standing icterus disappeared in about ten days. Syphilitic growth of the larynx which had produced a severe dyspnea and stridor disappeared quickly after an injection and remained only as a solid infiltration and was treated with a second injection. Edema of the larynx did not occur. Severe constitutional symptoms were noted in a case of cerebral lues; temperature 106, pulse 140, with extreme prostration that lasted 5 days. The cerebral lues had not shown a decided improvement. A remarkable effect was observed in one patient suffering from cerebral lues. For six months this patient had been under mercurial injections, the lues contracted eight years previously. He had double vision with paresis of the abducen with diminution of vision of the right eye, the left being perfect. He was given 0.5 grammes of "606"; until the seventh day improvement was not apparent. After the seventh day of the injection, a remarkable improvement seemed to have taken place over night, as he could clearly recognize the newspaper print and the contour of buildings with an accelerated pupillary and ciliary action to light.

Parasyphilitic diseases (tabes, paresis, etc.) so far have shown little or no improvement. Some symptoms seemed to improve, such as the girdle sensation in tabetics, but this probably would have occurred in this class of patients with most any injection. The Wasserman reaction usually disappears in from 8 to 40 days. In one or two cases of absolute lues with a negative Wasserman reaction, a positive reaction appeared several days after the injection and then disappeared.

Wechsleman explains this obscure reaction to the setting free of quiet spirochetæ by the injection and they carrying their specific matter into the circulation. Widespread and severe recurrences, such as occur after mercurial treatments, have not been noted. In a few cases of recurring syphilis, a second injection has been given.



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Under the Direction of the Secretary of the State Board of Health

ANTITYPHOID VACCINATION.

By H. W. Stoner, M.D.

ANTITYPHOID vaccination may be divided into three classes: First, the preventive, or prophylactic vaccination; second, vaccination during the acute infection, and third, vaccination of chronic typhoid fever, commonly known as "carrier cases." In all three of these conditions the treatment is essentially the same, and consists of the hypodermic injection of sterilized cultures of the typhoid bacillus.

PROPHYLACTIC VACCINATION.

The class that has found the widest application, and which so far has given the greatest success, is the prophylactic vaccination against typhoid fever. This preventive treatment was first introduced by Sir Almoth Wright,¹ who inoculated 19,069 British soldiers during the Boer War. Wright's earlier methods were rather crude, and the results of many of the inoculations were lost sight of. However, it was found that both the morbidity and the mortality from typhoid fever was much lower in the inoculated soldiers than it was among those not inoculated, and Wright, in a careful attempt to present the subject fairly, estimates a reduction in the morbidity among the inoculated men as 50 per cent., and a reduction in the mortality of those that became infected in spite of the inoculation as 50 per cent. also. These combined results would give an average reduction of about 75 per cent. in the death rate.

Kuhn² from 1904 to 1906 inoculated 7287 German troops in South Africa, and compared the results with 9209 soldiers in the same regiments who were not vaccinated, and found that the morbidity among the inoculated was 50 per thousand, whereas in the uninoculated it was 98 per thousand. The mortality was 3.2 per thousand in the inoculated and 12.5 per thousand in the uninoculated. This is also a total reduction in the death rate of about 75 per cent.

Early in 1905 Leishman³ inoculated soldiers in 16 British regi-

ments as they were sent out to the colonial possessions of the British Empire. As each regiment was sent away as many soldiers as desired the inoculations were vaccinated, and a trained medical officer accompanied each regiment, with instructions to keep careful records of the cases of typhoid fever occurring in the vaccinated and non-vaccinated men. Of 5473 men who had been inoculated, 21 contracted typhoid fever and two died, while of 6610 non-vaccinated soldiers in the same regiment, living under the same conditions, 187 were stricken with fever, and 26 died. The attack rate among the inoculated was 3.6 per thousand, and among the uninoculated 28.3 per thousand, while the death rate among the inoculated was 0.3 per thousand, and among the uninoculated it was 3.9 per thousand.

From early in 1908 to June of the present year Major Russell⁴ of the United States Army has supervised the preventive inoculation of 8510 American soldiers, located in 102 army posts in different parts of the country. Not one case of typhoid fever has occurred up to date among the men receiving the total number of three injections, although over 200 cases of typhoid fever has occurred in soldiers in the same posts who were not inoculated.

From 1899 to 1908 the morbidity from typhoid fever among the nurses and attendants at the Massachusetts General Hospital had averaged 1.6 per cent. Last year Spooner⁵ inoculated all of the attendants and nurses, with the result that there has not been a single case of typhoid fever developed among them since the inoculations.

Since March, 1910, under the supervision of Dr. Hachtel, 68 persons have been vaccinated against typhoid fever at the Health Department. These include 50 house physicians, nurses and orderlies from the Mercy Hospital, 16 physicians and six laboratory workers and medical students. As the work was only started early in the spring of this year, it is too soon to arrive at any conclusions as to the practical results, except to state that none of the inoculated have developed typhoid fever, and while the morbidity from this disease among the attendants at the Mercy Hospital for the past five years has averaged about 3 per cent., this year there has not been a single case.

Preparation of Vaccine.—Antityphoid vaccine is prepared by washing off the growth of a 24-hour-old agar culture with sterile normal salt solution, standardizing the dosage according to Wright's method and killing the organisms by heating to 56° C. for an hour, or by adding one-half of 1 per cent. carbolic acid. The vaccine should not be used until aerobic and anaerobic cultures have been grown from it to prove that it is perfectly sterile.

Dose.—The amount of vaccine administered at a dose varies with different authorities. In the prophylactic inoculations made on the soldiers of the United States Army, Russell⁶ uses 500,000,000 dead organisms for the first dose, and this is followed at intervals of 10 days between each dose by two injections of 1,000,000,000 each. Spooner uses three doses of 100,000,000, 200,000,-

000 and 300,000,000, respectively. At the Health Department we inoculate 100,000,000, 250,000,000 and 500,000,000, with five days' intervals between each dose.

Effects of the Inoculations.—The inoculation is usually followed by more or less pain, and some induration around the site of injection. This may last from 12 to 24 hours. In the majority of cases there is no systemic reaction, but in a small percentage there is a feeling of lassitude, and sometimes slight headache, both of which pass off in a few hours. In a very few cases the reaction may be more severe, and one or two of our patients had a temperature of 101 to 103, with pain in the limbs and general malaise. All of these symptoms pass off within 24 to 48 hours. No other ill-results have followed any of our prophylactic inoculations, nor has there been reported in the literature any bad effects following the injections of vaccines, either in the treatment of cases or in the prophylaxis, other than those just noted.

Increase in Antibodies.—In a number of our prophylactic inoculations careful study was made of the blood serum, and it was found that in from three to four days after the first inoculation there was a rise in the bacteriolytic, agglutinative and opsonic properties of the blood, and after the third inoculation these usually reached a high degree, several of the bloods being bacteriolytic for the typhoid bacillus at a dilution of 1 to 20,000, agglutinating the organism at a dilution of 1 to 1000, and being phagocytic at a dilution of 1 to 500.

Just how long the immunity lasts is still a question, but the British authorities claim that it persists for three years at least. The subject is still in its infancy, and requires much further study. It is a fact, however, that the antibodies begin to disappear from the blood in about two months after the inoculations. This is also true in a majority of instances of the blood of patients who have had typhoid fever, and we know that one attack of typhoid usually confers immunity for a lifetime. Whether studies on prophylaxis will prove the same remains to be seen.

Application.—Besides its use in military life, the prophylactic inoculation against typhoid fever has been recommended for hospital internes, medical students, nurses, hospital attendants, physicians, members of construction camps, residents of localities in which there are epidemics of typhoid fever and members of families in which the disease exists.

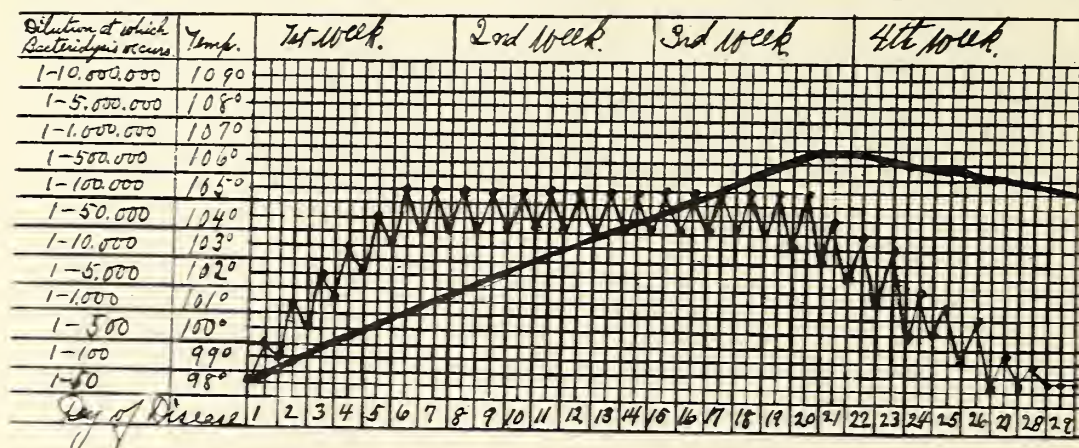
VACCINATION DURING TYPHOID FEVER.

As to the value of antityphoid vaccine in the second class of cases, that is, during the acute stage of the disease, the number of cases reported on which it has been used is too small to arrive at any definite conclusions, although all of the observers who have used it claim that some benefit is derived. In order to understand how vaccine may be of benefit in typhoid fever, it will be necessary to call attention to some facts concerning the disease.

Like most diseases of an infectious nature, typhoid is self-limited.

There is no known method of aborting it or shortening its duration, and the use of drugs is limited to the alleviation of some of the more severe symptoms as they develop. In general, it may be said that the disease starts insidiously, rarely abruptly, and the symptoms gradually increase in severity up to about the middle of the second week, after which there are no marked changes until the latter part of the third or beginning of the fourth week, at which time the symptoms begin to abate, and convalescence is established through lysis.

Extensive studies of the bacteriolytic property of the blood have been made by Stern and Korte⁷, Hahn⁸, Korte and Steinberg⁹, Dennison¹⁰ and others, and these studies have shown that while the serum of a healthy individual is usually bacteriolytic for the typhoid bacillus at a dilution of 1 to 50, or sometimes even at 1 to 100, in typhoid fever there is a gradual rise in this bacteriolytic property of the blood, until at the very height of the disease it may be active at dilutions as high as 1 to 4,000,000. It is just about the time that these lytic bodies reach their maximum that the temperature and



Schematic diagram showing the gradual increase of bacteriolysins in the blood in typhoid fever, and the fall of the temperature after these bodies have reached their maximum. (The bacteriolytic curve is indicated by the heavy line; the temperature by the smaller lines.)

other symptoms of typhoid begin to abate. It must not be understood from the above that the bacteriolysins always reach the same maximum height, and in the four cases studied by Dennison the highest points occurred at dilution of 1 to 1,000,000, 1 to 500,000, 1 to 50,000 and 1 to 50,000, respectively, but it is when the maximum bacteriolysis occurs that the course of the disease starts to improve.

It is a well-known fact that the typhoid bacillus does not form a soluble toxin, but that the bacterial cell contains an intracellular poison known as an endotoxin, which is only liberated on the death and disintegration of the organism. In view of these facts, it seems logical that during an attack of typhoid fever, as each successive generation of organisms die and disintegrate, endotoxins are set free and stimulate the formation of new bacteriolysins. These lysins, by aiding in the destruction of more organisms, add to their own strength, until finally they are being manufactured by the body in sufficient quantities to overcome the infection.

It has already been shown in the discussion of the prophylaxis of typhoid fever that the injection of dead bacteria causes an increase in the antibodies, particularly the bacteriolysins, and Russell¹¹ has found the blood following such injections sometimes is bacteriolytic at a dilution as high as 1 to 1,000,000. It would therefore seem reasonable that the injections of such vaccines early in a case of typhoid fever might materially aid in the earlier production of the antibodies needed in overcoming the infection. It may be argued that the liberation of the endotoxin from these dead organisms may have a bad effect. This is true, and such inoculations are usually followed by exacerbation of the symptoms, such as a slight rise in temperature, sometimes slight headache, but these only last for a short time, usually not over 12 to 18 hours, and are usually followed by the temperature being reduced and general improvement. As a matter of fact, the great danger in typhoid fever is the prolonged action of the toxins on the system, and death seldom occurs in this disease before the third week, so the early injection of vaccine may, by causing an early rise of the bacteriolysins, shorten the duration of the disease, and thereby cause a reduction in the mortality.

The following authors have reported the result of the use of vaccines in typhoid fever:

Authors.	Cases.	Deaths.	Relapses.
Richardson ¹²	40	None reported.	2
Illman and Duncan ¹³	1	1	4
Watters and Eaton ¹⁴	30	1	4
Watters and Eaton ¹⁵	4	..	..
Semple ¹⁶	9	..	..
Smallman ¹⁷	36	3	None reported.
Nichols ¹⁸	11	..	2
Richardson ¹⁹	28	None reported.	1
Raw ²⁰	9	2	None reported.
	—	—	—
	168	7	9

The average mortality in typhoid fever is between 10 per cent. and 12 per cent. The number of reported deaths in the above series of cases average 4.1 per cent. Relapses occur in about 20 per cent. of cases ordinarily, while the number of relapses reported in the above series is 5.3 per cent. As it is not known whether the deaths and relapses not reported would give the same average as the above, some reported averages will be given: In 77 cases observed by Watters and Eaton, 31 were treated with vaccines, with a death rate of 3.2 per cent. The death rate in the 46 unvaccinated cases was 11.1 per cent. In the first series of 40 cases treated by Richardson only 5 per cent. relapsed, while of 163 other cases not receiving vaccine, 21.4 per cent. relapsed. All the authors believe that the use of vaccines is followed by a lowering of the tempera-

ture, general improvement and shortening of the duration of the disease. No ill-effects have been reported from the use of vaccines during this condition.

VACCINATION OF CARRIER CASES.

The treatment of typhoid carriers by vaccines was first reported by Irwin and Houston²¹. The patient was a domestic, who had had typhoid fever seven years previously. In the interval, six people in families in which she had worked had contracted typhoid fever. As her health had been bad since the attack of the disease, she was finally sent to a hospital. An examination of the stools and urine showed the latter to be swarming with typhoid bacilli. For the first five weeks the patient was treated with tonics, urinary antiseptics and rest. At the end of this time the organisms were still present in the urine. An autogenous vaccine was prepared and administered, and after the fourth dose the bacteria disappeared. Three subsequent examinations of the urine and stools were negative, and the patient's health was markedly improved.

In a later article Houston²² reports three additional carrier cases treated with vaccines with good results. Gossman²³ also calls attention to a carrier case, treated by Dr. Stone, in which the use of vaccines resulted in a cure.

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- ¹⁴Watters and Eaton: *Med. Record*, 1909, p. 93.
- ¹⁵Watters and Eaton: *Boston Med. and Surg. Jour.*, 1909, CLX, p. 508.
- ¹⁶Semple: *Lancet*, 1909, II, p. 1672.
- ¹⁷Smallman: *Jour. Royal Army Med. Corps*, 1909, XII, p. 136.
- ¹⁸Nichols: *Washington Med. Annals*, 1909, p. 293.
- ¹⁹Richardson: *Jour. Amer. Med. Assoc.*, 1910, LIV, p. 255.
- ²⁰Raw: *Brit. Med. Jour.*, 1910, I, p. 1538.
- ²¹Irwin and Houston: *Lancet*, 1909, I, p. 311.
- ²²Houston: *Brit. Med. Jour.*, 1909, II, p. 1056.
- ²³Gossman: *Loc. cit.*

Book Reviews.

HEREDITARY CHARACTERS AND THEIR MODES OF TRANSMISSION.
By Charles Edward Walker, M.Sc., M.R.C.S., L.R.C.P. Published by Edward Arnold, London, and Longmans, Green & Co., New York. Price \$2.40 net.

The author believes that in this work he has put forth for the first time a fresh hypothesis regarding the problem of sex. He concludes from his own experiments and the recent discoveries of others that he has satisfactorily correlated the results of the Mendelian experiment with the observation of the biometricians. The book is couched in as unscientific language as is possible with the subject under consideration, many interesting experiments are detailed and many objections cited to theories hitherto exploited. Those interested in the various theories concerning the propagation of the race will find included in these pages many unique suggestions concerning this phenomenon.

His conclusions are as follows: "As biparental reproduction tends to eliminate all useless variations, this effect must be accentuated when the sexes are separate; that is, when any given individual produces only sperm or only ova, for inbreeding cannot then be so close as when every individual produces both sperms and ova. Sex, being therefore advantageous to the race, has been produced by the action of natural selection upon individual variations. As the utility of the sex depends upon the two characters remaining separate, the effect of natural selection has, while preserving and accentuating them, prevented their tendency to blend, as racial characters generally do. That variations toward blending is shown by the occurrence of hermaphrodites in species where the sexes are generally separate. The fact that sex is transmitted in an alternative manner like individual characters has led some observers to consider sex as an ordinary individual or Mendelian character. The fact that the secondary sexual characters, although they are really racial characters, only appear in the presence of one or more classes of gamete has led to the assumption that the individual or Mendelian characters are similar to or identical with them. Lastly, the distribution of the chromosomes to the gametes and their recombination at fertilization provides a mechanism for the alternative distribution of sex-producing or sex-controlling entities, just as in the case of individual characters."

A MANUAL OF NURSING. By Margaret Frances Donahoe, formerly Superintendent of Nurses and Principal of Training School, Philadelphia General Hospital. Illustrated. New York and London: D. Appleton & Co. Cloth, \$2 net. 1910.

The present volume is well adapted to the needs of the nurse, especially the pupil nurse. It includes a fairly complete exposition of the needs of the sick and a goodly amount of useful knowledge requisite to the intelligent handling of the sick. Today the nurse is not a kind friend picked up here and there for the purpose, but an educated woman or man who has received special instruction

in the science of nursing, which daily is becoming broader and broader. The writer of this volume has had a wide experience in the needs of her profession, and has excellently handled a most arduous task in the production of a book admirably suited to the needs of the nurse. The contents include the administering of anesthetics, nursing of the insane, nursing of skin diseases, nursing of typhoid fever, care after operation, venereal diseases in women and children. This volume upholds the high standard of the many excellent treatises on nursing which have recently been issued, and is a valued addition to nursing literature. There is no useless waste of verbiage. The writer says what she has to say in as few words as possible. A nurse in need of information will find this book a friend indeed.

A TEXTBOOK OF BACTERIOLOGY. A Practical Treatise for Students and Practitioners of Medicine. By Philip Hanson Hiss, Jr., Professor of Bacteriology, College of Physicians and Surgeons, Columbia University, New York city, and Hans Zinsser, M.D., Associate Professor in Charge of Bacteriology, Leland Stanford, Jr., University, Palo Alto, Cal. With 156 illustrations in the text, some of which are colored. New York and London: D. Appleton & Co. Cloth, \$3.75 net. 1910.

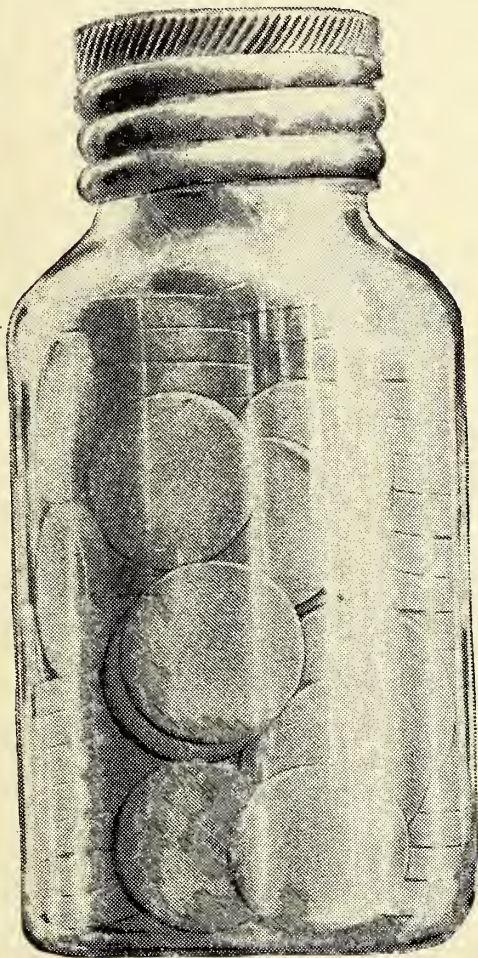
Such rapid advances have been made in the science of bacteriology that books which were absolutely up to date yesterday do not today meet the requirements of the student or general practitioner. The above-mentioned volume has brought our knowledge of this important field of medical endeavor up to the present hour. The therein contained material is thoroughly reliable and trustworthy, and boiled down to such a space as to make the several subdivisions practical to the use of students and physicians. It must not be understood by this that the work is a compend or merely touches the high points of the subject, as its over 700 pages attest. The arrangement is particularly attractive, the first section being given over to "The General Biology of Bacteria and the Technique of Bacteriological Study"; the second, to "Infection and Immunity"; the third, to "Pathogenic Micro-Organisms"; the fourth, to "Diseases of Unknown Etiology" (rabies, smallpox, acute anterior poliomyelitis, yellow fever, measles, scarlet fever and foot-and-mouth disease); the fifth, to "Bacteria in Air, Soil, Water and Milk."

The chapter on immunity is especially comprehensive and instructive. Here we have, briefly stated, the path of entrance of the several pathogenic organisms into the human system and what becomes of them after entrance, the bacterial poisons elaborated and the mode of action of bacterial poisons. The various forms of immunity are considered together with the antibodies and the substances giving rise to them. In fact, infection and immunity in all of its aspects as understood by bacteriologist receive due attention; toxins and antitoxins and the method of production and testing of

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Abstract.

TRAUMATIC NEUROSIS AND BABINSKI'S CONCEPTION OF HYSTERIA.*

By Tom A. Williams, M.B., C.M., Edin.,
Washington, D. C.

IN this communication Williams replies to certain objections called forth by his signed editorial (in *Monthly Cyclopaedia*, November, 1908), "Recent Advances in Hysteria in Connection with Traumatic Neuroses." He shows that horror, fear and pain need not necessarily suggest any after-idea of disability, and that they cannot replace this. He concludes that for the explanation of the fixed idea at the root of traumatic neuroses, suggestion is indispensable, usually primitive, and need neither be subsequent to the accident, nor verbal, nor accompanied by emotion.

He quotes Bevan's 24 cases of "spinal commotion," occurring among 265 passengers in a single railway accident.

He demands the evidence that exhortation can affect pathological exudates, or even functional rearrangements of the Betz cells. He quotes the gastric neuroses as examples which are cured by the removal of false fixed ideas, usually produced by unskillful suggestions by medical men. There is no trauma in the induction of these, of which the pathogenesis is the same as that of traumatic neurosis. Both are induced by suggestion and removed by suggestion-persuasion, and are, therefore, hysterical. The fontine suggestions are imbibed from the patient's surroundings.

The effect of the indemnity, where malingering is not in question, is rather in the *amour propre* than in the pocket. A personal case illustrating this point is fully described, and the author analyzes the reasons for the success of its treatment.

There follows a discussion upon the diagnosis of suggestibility. This must not be by exclusion, but by positive signs, which, however, are not yet susceptible of measurement.

He concludes with an appeal for replacement of psychological mystification by diagnostic positiveness, in order that our profession may no longer suffer the reproach of incompetence in the face of certain so-called functional nervous disorders.—*Medical Record*, October 2, 1909.

*Com. to II Int. Cong. for Indust. Accid., Rome, 1909.

Editorial Comment.

TRICHINOSIS.

Medical Record.

THOUGH human infection with *Trichina spiralis* is a matter of deep concern to the sanitarians of various parts of Europe, the disease in this country is, as a rule, considered to be so rare as to attract very little attention from either clinicians or sanitarians. That this neglect of a disease so important and so serious as trichinosis is the cause of many mistaken diagnoses is emphasized by two articles appearing in the August number of *The American Journal of the Medical Sciences*. In one of these W. Gilman

Open Letter No. 3

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Thompson reports 52 sporadic cases seen by him in New York city during the past six years, and in the other Henry Albert reports a sharp epidemic which occurred among the students of Iowa College in 1907. Trichinosis is a disease easily overlooked by one not constantly on the watch for it, but diagnosed with the utmost ease by one keeping the condition in mind. Though often mistaken for typhoid fever, such an error should be corrected in the course of a few days. The sudden onset with fairly rapid rise of temperature, the exquisite muscular tenderness, the peculiar form of diaphragmatic dyspnea, the slight puffiness of the eyelids and face, and edema of the ankles and possibly corneal hemorrhages, all associated with marked prostration, make up a symptom complex which should invariably suggest the presence of trichinosis. As soon as the possibility is suggested the difficulty is past, as the confirmation of the diagnosis is a matter of simplicity. The most positive proof of the infection is of course the finding of the *Trichina spiralis* in the muscle of the patient; the simplest is a differential count of the leucocytes. With a series of symptoms as above described the presence of over 15 per cent. of eosinophiles in the blood is practical proof of trichinosis, whereas a normal eosinophile content as distinctly excludes the disease.

The comparative immunity which has been believed to exist in this country to trichina infection, owing to the fact that raw ham is but rarely eaten here, is shown by Albert to be a false security, for in his epidemic in Grinnel the ham eaten had been boiled. As this "boiling" process as carried on by the dealers consists in keeping the hams in vats for several hours, it would be expected that the parasites would be killed. On investigation, however, it developed that the temperature was but rarely raised above 200 degrees F., and in many cases did not exceed 170 degrees F. Such "boiling" apparently does not render it a safe food and makes it of vital importance that all ham before it is eaten should be recooked in the house.

A SKIN REACTION IN CANCER.

Medical Record.

WHILE waiting for the discovery of a specific cure for cancer, which may be nearer than one dares hope, the general consensus of medical teaching, with few exceptions, is that the only salvation for the bearer of a malignant growth is in the earliest possible operation. This, of course, depends upon early recognition, but cancer is notoriously insidious in its beginnings, and by the time the symptoms are sufficiently pronounced to warrant operation, especially in the case of internal growths, it is usually too late, and any operative interference is then as likely to scatter the seeds of disease as it is to bring permanent relief. Any method, therefore, that promises to facilitate the diagnosis of a malignant growth in its earliest stages is to be welcomed. Writing in the *American Journal of the Medical Sciences* some time ago, Elsberg, Neuhof, and Gint of the Mt. Sinai Hospital of this city, described a skin reaction which they obtained in several cases of carcinoma from the subcutaneous injection of human red-blood cells. The reaction depends upon the hemolytic action of the serum of the subject of malignant disease. This action has been observed *in vitro*, but it is often so feeble that it is difficult to determine its presence, and

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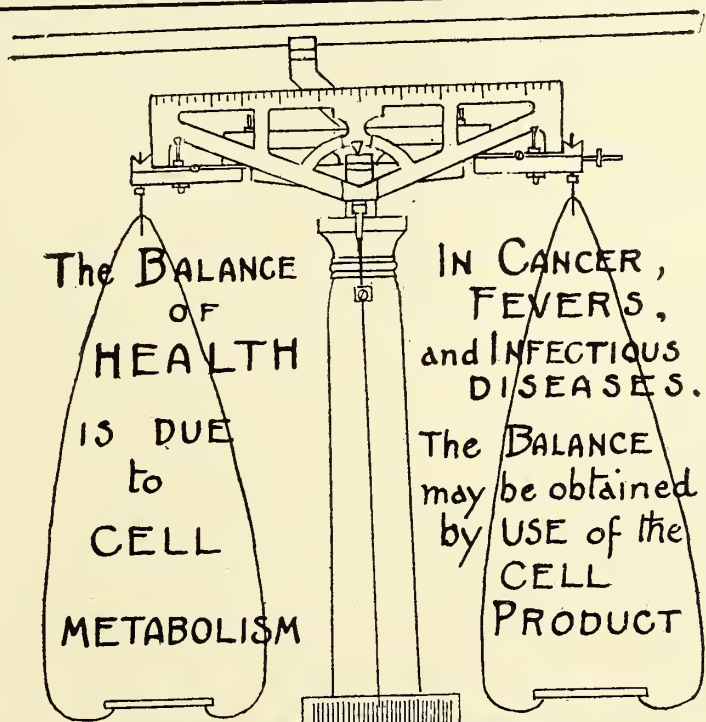
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Elsberg accordingly conceived the idea of bringing the red cells into immediate contact with the serum of the cancerous patient *in vivo*. Carrying out this idea, the authors of the paper instituted a series of experiments on cancerous and normal individuals, injecting under the skin a suspension of crushed erythrocytes in saline solution. When a reaction occurred it began to show itself in about five hours after the injection and gradually increased in intensity during the next two or three hours. It appeared in an irregularly oval, slightly varied, reddish area, measuring from 2 to 5 cm. in length and 1 to 3 cm. in width, not infrequently surrounded by a whitish areola. It persisted for a variable period of time, usually from 6 to 12 hours after the injection. Six hundred and eighty-four injections were given to 432 individuals with quite uniform results. In 89.9 per cent. of the cases in which a reaction occurred there was a positive diagnosis of cancer, and in 94.3 per cent. of the cases in which no reaction occurred it was possible to exclude malignant disease.

SOCIAL SERVICE.

The Cleveland Medical Journal.

UNTIL recently the rôle of the hospital dispensary has been two-fold—on the one hand, that of a clearing-house, where the acutely sick are weeded out from the mass of interesting “chronics” and minor maladies which throng the benches, and, on the other hand, that of a teaching clinic, where students and, incidentally the dispensary staff, see a vast number and variety of diseased conditions at close range. Those patients in need of hospital care, proportionately a very small percentage of all the cases seen daily in a busy dispensary, are referred to the wards. The rest are more or less carefully studied, demonstrated to the students, examined and re-examined, and then are given their bottle of medicine or box of pills, with a few perfunctory remarks of advice or admonition as to the necessity of “rest” or “fresh air” or “good simple diet,” when, in all probability, the patient is struggling for existence in some overcrowded workroom on wages barely sufficient to buy food for himself and family. That many individuals receive real benefit from the careful medical study which they receive is undoubtedly true, but that the benefits derived are largely on the side of the staff officers and students can scarcely be denied. The reason for all this is not far to seek. While the physicians in charge of an outpatient department see each case, carefully draw their conclusions on it and endeavor to map out a plan for the treatment of each individual, yet their sphere of usefulness cannot reach far beyond the door of the dispensary. Outside the dispensary are the same inexorable facts—ignorance, overwork, poverty and dirt. How can a few moments’ talk on diet and a bottle of the tincture of nuxvomica be expected to charm away such an host of evils?

In the hope of getting a firmer hold on the great problem of the welfare of the ambulatory patients, the Massachusetts General Hospital, some years ago, opened its social service department, as an adjunct to the outpatient department, hoping to keep in touch with the patients in their homes and their daily life. The fundamental aim of this department was to follow the patients beyond

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the dispensary, to aid them, and, if necessary, to force them into better methods of living and thinking. At first an experiment, the department has grown to be an integral part of the outpatient system of the hospital. It is the link that joins the patient's life to the clinic. Through the untiring efforts of a large and intelligent staff of workers the patients are followed and helped to help themselves. The advice of the physician is now of value, for the Social Service Department shoulders the responsibility of carrying out the physician's instructions. Perhaps a partially invalided man needs lighter work; it is found for him; or someone needs orthopedic appliances, for which he cannot pay even the nominal fee charged by the hospital. The necessary money is advanced to him, and his efficiency as a wage-earner is restored. Homes are cleaned, better food is procured, hygiene is brought in, where ignorance and filth reigned supreme. No matter on what the problem may depend, ignorance, poverty or crime, a solution is sought by steering or pushing the patient toward a better condition. The hospital wards are closely watched, and those patients who must leave the hospital well, yet unfit for work, are cared for in convalescent homes until they can take up their life again with safety. The large class of so-called "neurasthenics" fall naturally under the care of this department. The cause of the trouble may often be found in the patient's mode of life, and the close association arising from the visits to the patient's home, the encouragement and suggestion coming from a sane, sound and cheerful mind do much toward righting the condition, which has brought the individual down to the status of an "outpatient rounder," the thorn in the side of the outpatient physician, who cannot call a social service department to his aid.

The development of such work presupposes a leader with a mind trained for and a personality adapted to social work: it needs a sufficient staff of workers, so that each case may receive due care and consideration. All this needs money, for the salaries of the workers, for relief funds, vacations, loans, and all the multifarious needs of such a system. Given such a department, the co-operation of the medical staff and of the public should be quick and complete.

Those interested in the improvement in the health and hygiene of the community, which is, after all, an improvement in its economic efficiency, should be deeply grateful to the originators of this social service work at the Massachusetts General Hospital. They have pointed the way whereby the hospital dispensary may cease from being a museum of interesting medical and surgical conditions, and whereby the flotsam and jetsam of our social system may be rescued from the overwhelming tide of circumstances which is whirling them on to complete destruction.

ACUTE ANTERIOR POLIOMYELITIS.

Denver Medical Times and Utah Medical Journal.

THE increasing prevalence of acute spinal paralysis, now recognized as an infectious disease in the eastern part of the United States, and the possibility of an epidemic occurring even in the Rocky Mountain region, are sufficient reasons for calling attention to some of the more recent researches upon the subject, notably

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those of the Rockefeller Institute for Preventive Medicine, those of Lavaditi (Transactions of Paris Biological Society), and the report of the joint committee of the New York neurologic and pediatric societies.

The causative organism may be ultra-microscopic, though Livaditi seems to have discovered in the centrifugated sediment large numbers of an extremely small staphylococcus. As to the path of infection, Flexner is of the opinion that the virus of poliomyelitis, like the diplococcus intracellularis, enters the body by way of the nares, infecting first the meninges. Pathologic sections show not only inflammation of the anterior horn of the spinal cord, but of the intervertebral ganglia and spinal roots as well. The human virus has so far been transmitted only to monkeys, the period of incubation varying from 4 to 33 days (average, 8 days).

The sudden onset of poliomyelitis is marked by some or all of the following symptoms: Fever (often as high as 104° F., lasting two days to a week or more); vomiting, diarrhea; restlessness, headache and pains in limbs and trunk; delirium, apathy, stupor; rigidity of neck; twitchings, convulsions; papular eruption; and, most distinctive of all, asymmetric, flaccid (rarely spastic at first) monoplegia, appearing as a rule on the first, second or third day.

This flaccid paralysis (most common in tibial and peroneal groups), with weakening or loss of reflexes in related muscles, often accompanied by the Babinski plantar response (slow extension of big toe) and fan sign (spreading of four outer toes), is, of course, the most important factor in diagnosis. Before paralysis is apparent, the diagnosis from rheumatism and other beginning infections may be difficult, if not impossible. The same pains in joints on movement as in rheumatism are complained of. In no other disease, says Fischer, is the faradic muscle reaction lost so quickly as in acute spinal paralysis. In Pott's disease the deep reflexes are exaggerated. Acute poliomyelitis occurs almost exclusively in infants (often just learning to walk) and children.

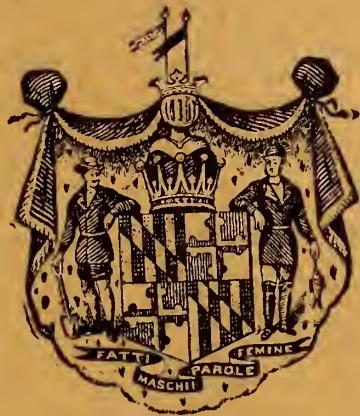
Prognosis varies with the extent and severity of the epidemic. In the New York epidemic of about 2000 cases, 8 per cent. died and only 6 per cent. made a complete recovery from the paralysis. Following the acute or febrile stage, there is a "stationary stage," lasting one to six weeks, and then a period of improvement ending in from six to twelve months. Investigations now under way looking toward a specific vaccine treatment may yet work wonders.

As a routine sterilizing treatment, Starr gives hexamethylenamin by the mouth. Frequent and prolonged hot baths (kept at 100°—104° F.; at least 15 minutes, three or four times a day) are especially recommended by the New York committee, not only in the acute stage, but also later to prevent contractures, by passive and voluntary movements in the water. To maintain the life of the muscles and prevent rapid atrophy and deformities, Tom A. Williams (*Virginia Medical Semi-Monthly*, August 26) considers early (as soon as fever subsides) and persistent galvanic stimulation of the related myotomes most essential. In his experience, galvanism to the muscles has a soothing effect in preventing muscle ache and joint stiffness. Potassium iodid (or better, we think, in children, syrup of iodid of iron) is still a standby in aiding absorption of inflammatory exudates. Nourishing food, good cheer, sunshine and fresh air are at least of equal value with medicines. In the later stages massage, bandaging and orthopedic apparatus have their indications and uses. Clubfoot is the most common sequel.

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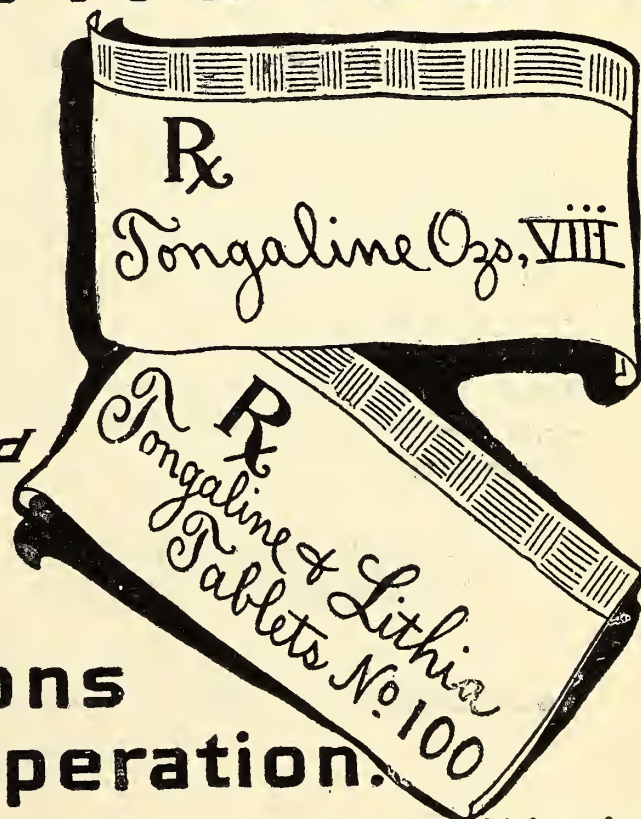
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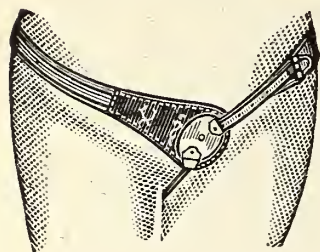
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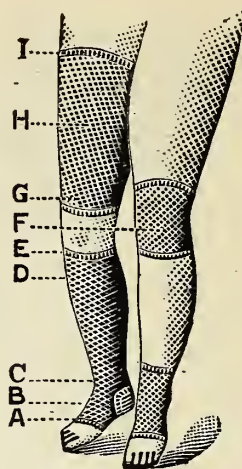
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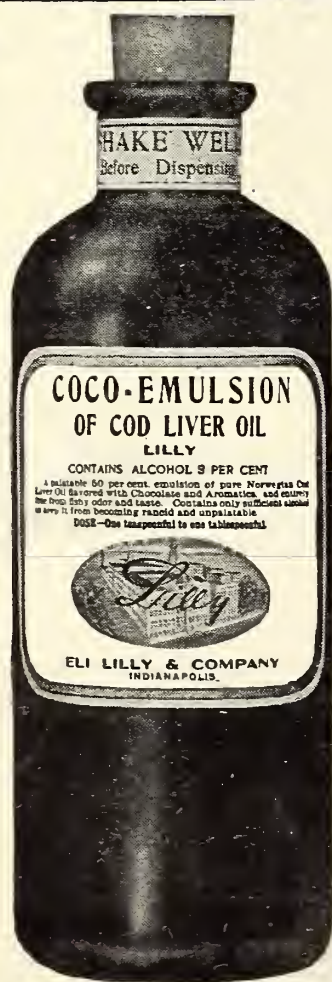
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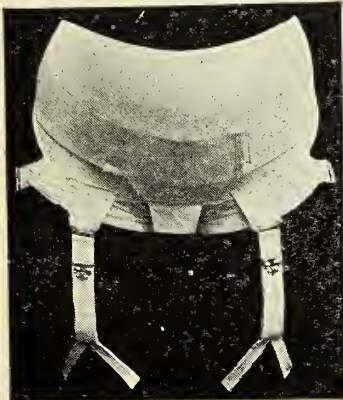
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“ Acad. of Opthal and Oto-Laryngology	Geo. F. Suker M.D., 103 State St., Chicago, Ill...	
“ Anatomists, Association of.....	G. Carl Huber, Ann Harbor, Mich.....	Baltimore, Dec., 1910
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“ Climatological Association.....	Guy Hinsdale, Hot Springs, Va.....	Montreal, June, 1911
“ Dermatological Association.....	James M. F. Winfield, Brooklyn, N. Y.....	Boston, June, 1911
“ Electro-Therapeutic Association.....	J. W. Travell, 27 E. 11th St., New York	
“ Gastro-Enterological Association.....	Chas. D. Aaron, 32 W. Adams Ave., Detroit, Mich.	
“ Gynecological Society.....	Le Roy Brown, 70 W. 82d St., New York.....	Atlantic City, May 23-25, '11
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“ Laryngological Association.....	J. E. Newcomb, 118 N. 69th St., New York.....	
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“ Medico-Psychological Association....	Charles G. Wagner, Binghamton, N. Y.....	
“ Medical Colleges, Association of.....	F. C. Zapffe, 1764 Lexington St., Chicago, Ill.....	
“ Neurological Association.....	Alfred R. Allen, Philadelphia, Pa.....	
“ Ophthalmological Society.....	W. M. Sweet, 1205 Spruce St., Phila.....	New London, July 11, '1
“ Orthopedic Association.....	Robt. B. Osgood, 372 Marlborough St., Boston..	
“ Otological Society.....	F. L. Jack, 215 Beacon St., Boston, Mass.....	
“ Pediatric Society.....	Samuel S. Adams, 1 Dupont Circle, Wash., D. C.	L. Mohonk, May 31-June 2, '11
“ Physio-Therapeutic Association.....	Otto Juettner, M. D., 8 W. 9th St., Cincinnati, O.	
“ Physicians, Association of.....	Geo. M. Kober, 1819 Q St., Washington, D. C....	
“ Proctologic Society.....	L. H. Adler, Jr., 1610 Arch St., Phila., Pa.....	Los Angeles, Cal., 1911
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“ Surgical Association.....	Robt. G. LeConte, 1530 Locust St., Phila.....	
“ Therapeutic Society.....	Noble P. Barnes, Washington, D. C.....	Boston, May, 1911
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British Medical Association	Guy Ellison, London, England.....	London, England, 1910
Canadian Medical Association.....	George Elliott, M.D., Toronto, Canada.....	
Con. of State and Prov. Bds. of N. A.	H. M. Bracken, St. Paul, Minn.....	
International Congress on Tuberculosis...	J. S. Fulton, M.D., Colorado Bldg., Wash., D. C.	
Mississippi Valley Medical Association.....	H. E. Tuley, 111 W. Kentucky, Louisville, Ky...	Rome, 1911
Missouri Valley, Medical Society of the.....	Chas. Wood Fassett, St. Joseph, Mo.....	
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Pan-American Congress, Fifth.....	Dr. Ramon Gutieras	
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Southern Medical College Association.....	L. C. Morris, M.D., Birmingham, Ala.....	
Southern Surgical and Gyn. Association.....	W. D. Haggard, Nashville, Tenn.....	Nashville, Tenn., Dec. 13-15, '10
Southern Medical Association.....	Oscar Dowling, Shreveport, La	
Tri-Medical Soc. of Md., W. Va. and W. Pa...	Percival Lantz, Alaska, W. Va.....	
Tri-Medical Society of N. C., S. C. and Va....	R. E. Hughes, M. D., Laurens, S. C.....	
Tri-State Med. Assn. of Miss., Ark. and Tenn.	R. McKinney, Memphis, Tenn.....	
Tri-State Med. Society of Iowa, Ill. and Mo...	Jos. E. Chambers, M.D., 918 Pine St., St. Louis, Mo	
Western Surgical and Gyn. Association.....	A. T. Mann, M.D., Minneapolis, Minn.....	Chicago, Dec., 1910

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THE frequently occurring statement in the literature that in the presence of strophanthus the objectionable cumulative effects of digitalis are to a great extent eliminated and the now experimentally confirmed fact that the joint action of these two similar, though not absolutely identically acting cardiac tonics, produces a superior therapeutic effect than can be obtained by each one separately, have led to the production of a digitalis-strophanthus preparation which is marketed under the name of Digistrophon.

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1910, No. 4, at the hand of eight clinical cases selected from a series of 85 which he has treated in the course of 10 months. These comprise 44 cases of organic defects of the cardiac valves, 18 affections of the cardiac musculature, 1 of pericardial adhesion with cardiac displacement, 3 grave disorders of the cardiac action due to thoracic stenosis and 19 of cardiac exhaustion in acute infectious diseases, particularly in typhoid.

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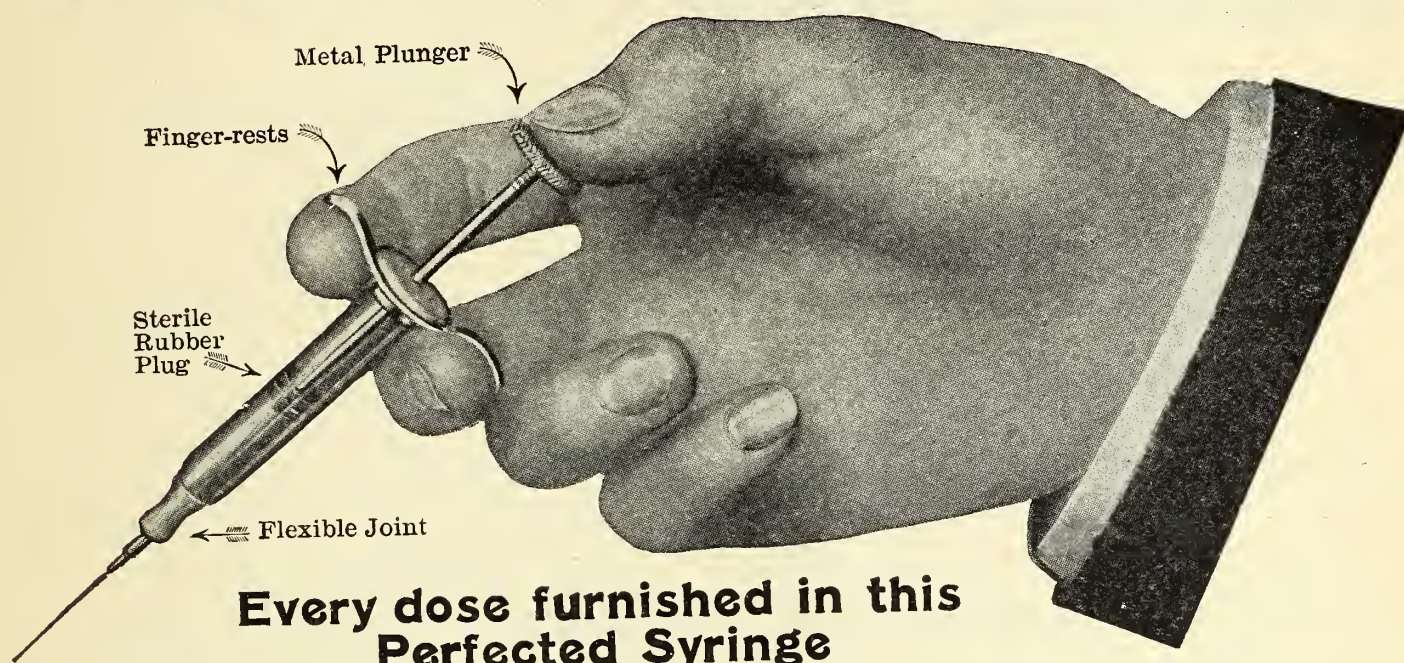
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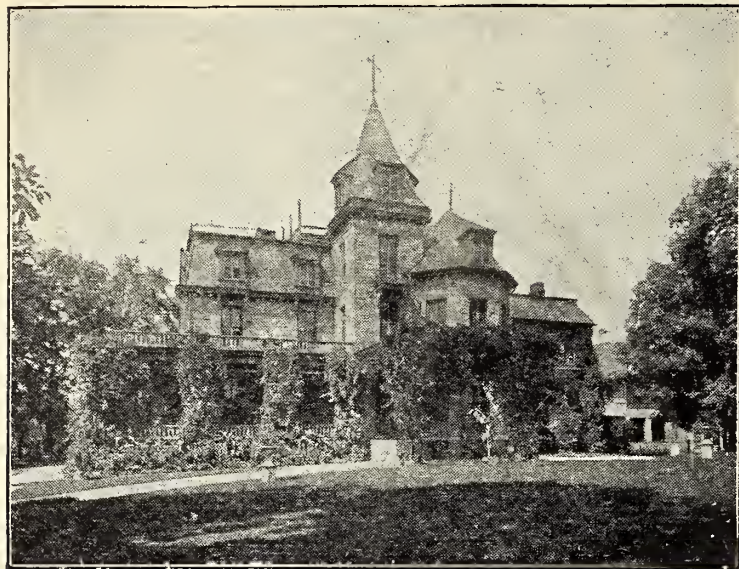
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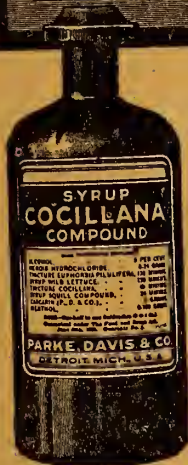


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